

ARIZONA MEDICINE

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ARIZONA MEDICINE

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Original ARTICLES

AMOEBIIC DYSENTERY

Paul Williamson, M.D.

Osawatomie, Kansas

AMOEBIIC dysentery has been diagnosed with increasing frequency during the past few years. It is probable that there has been an actual increase in the number of cases due to conditions arising during the war, but it is also true that more accurate diagnosis frequently plays a part. The disease is seldom difficult of diagnosis and will, in most instances, respond well to modern treatment.

Natural History. This is infestation of the intestinal tract with *Endamoeba histolytica* characterized by bouts of diarrhea and slow exhaustion of the patient. The amoeba gains entrance to the body in cystic form usually borne on food-stuff contaminated with human feces. Perhaps one quarter of those who ingest the cysts show symptoms of the typical disease. Primary lesions are confined to the colon, usually the caecal area. The amoeba tends to burrow into the mucosa of the bowel and to cause undermining ulcers. There is little toxicity encountered from the protozoan itself, the intensity of the disease frequently being determined by secondary invasion of the lesions.

Intermittent, sickly pains, usually in the right lower quadrant are first seen. As the lesions are invaded by other bacteria and become more protean in character and distribution, intermittent bouts of bloody diarrhea with tenesmus of moderate degree occur. Stools usually show some formed elements, much mucous, and streaks of bright red blood. They are very offensive but no characteristic odor is present. A degree of

constipation unusual to the patient may occur between bouts of diarrhea.

There is a tendency toward spontaneous remission and the patient may become relatively symptom free only to have the entire diarrheal episode repeated at each dietary indiscretion. Spontaneous cure has not been authoritatively reported. It is worthy of note that the appetite is relatively unchanged except in the most severe cases. Lassitude and malaise occur as a result of the anemia and the toxic products of secondary invaders. In the absence of intense secondary infection, the temperature, pulse, and blood pressure are little changed.

While many patients become relatively asymptomatic for long periods of time, a general downhill course is the rule with chronic exhaustive states inviting catastrophic secondary disease.

The parasite is rarely found in children and there are not a great number of cases reported in women. Males between 20 and 35 are usually affected. The vermiform appendix may be invaded and amoebic disease of the appendix is counted rare, but occasionally seen.

Specific Inquiries to be Made. One should question the patient in some detail about the onset of the disease. An explosive onset without any previous symptoms, while possible, mitigates against amoebic dysentery. Characteristically, the pains start in the right lower quadrant and precede the onset of diarrhea by one to three days. They are, at first, evanescent and difficult to attribute to any specific disease. The

Diarrhea begins mildly and becomes more intense over a period of several days to a week. From the first there is some bright red blood and much mucous present. The amount of blood is likely to increase and, although frank hemorrhage is rare, it can occur.

Ask particularly about appetite. It is seldom much disturbed during the initial period of the disease and this finding can be of much help in diagnosis. Also inquire about headache. It is seldom present except in the presence of severe dehydration or secondary infection. Few other diarrheal diseases show this characteristic.

Are there other cases of similar disease in the area? The patient, particularly in a rural section, will probably know. Sporadic cases of amoebic dysentery are found, but not as frequently as one might be led to suppose. The author has never seen a single case but what two or three more were found in the area within a month.

Physical Points to be Determined. The patient will usually be a male between 20 and 35. Except in cases of long standing, he will probably look surprisingly well for a person who has the symptoms he recounts. The temperature, pulse, and blood pressure will probably deviate little from the normal. These are valuable characteristics in diagnosis for few other diarrheal diseases exhibit these findings.

The abdomen will usually appear grossly normal. No abnormal intercostal breathing will occur, the abdominal and diaphragmatic musculature being used in a perfectly normal way. No muscle rigidity will be found although the patient usually guards against deep palpation over the cecal area. Tenderness may be found throughout the area of the colon but is usually most marked over the right and left lower quadrants. Rebound tenderness and Rovsing's sign are absent. There is no epicritic hyperesthesia and no Psoas sign. Percussion is frequently tympanitic over the gas filled colon, and, needless to say, peristaltic sounds are usually accentuated.

These are more or less protean findings in abdominal disease. To sum up, the findings are usually those of a moderate inflammatory process involving the cecum and sigmoid and with colonic tenderness through the course of the organ.

Other Procedures. Look for the amoeba. Do not be frightened away from the microscope by tales of extreme difficulty in identifying the parasite. With an applicator stick, pick up a

small amount of mucous or mushy stool. Place this on a slide and add a small amount of warm (NOT HOT) saline. Cover with a cover slip and examine under a high, dry lens. A heated penny placed at one end of the slide will keep the specimen warm. Any doctor can identify a motile amoeba. If the amoeba has in its cytoplasm ingested red blood cells, you have your diagnosis. Failing to find the parasite the first time, try again several times. *E. histolytica* is the most rapidly moving amoeba found in the intestinal tract. *E. coli* is very sluggish and puts out pseudopods slowly. *E. histolytica* moves rapidly for an amoeba and is in constant motion. This is not diagnostic, but can give you a good hint. In more chronic cases, a sample of formed stool should be sent to a reliable laboratory for detection of cysts.

Pitfalls. Occasionally a case will be seen with an explosive onset resembling (and, in fact, being) acute abdominal disease. More often a patient is seen early in the disease and is given symptomatic treatment which promptly gives him relief. Soon he is back again. This goes on until someone takes time to question and examine him, when a typical story is elicited.

The early stages of amebiasis may resemble appendiceal disease. Differentiation, if thought of, is not difficult.

Treatment. The proper use of modern antibiotics — particularly aureomycin and terramycin — will control secondary infection and do much to aid in eradication. The amoeba frequently may be eradicated by use of Milibis. Treatment results are good but by no means perfect. There is little agreement as to optimal dosage schedules.

It is wise to use small bland feedings quite frequently while administering the drugs. Nausea, if present, may usually be controlled by tincture of belladonna and an antacid such as amphojel.

Supposedly about 10 percent of our population harbor *E. histolytica*. The presence of cysts in the stool does not mean that all intra-abdominal symptoms (or any of them) are due to the presence of the parasite.

One should certainly remember that symptomatic relief does not indicate cure. Repeated stool examinations negative for the parasite, are fairly reliable. Under no circumstances should such a patient be dismissed without provision being made for periodic checks over a time of several years.

PULMONARY EMPHYSEMA*

Its Medical and Surgical Management

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and

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Oakland, California

A male child born today can expect to live to be 69 years of age. A female child born today can expect to live to be 72 years of age. Estimated from the 1950 census, a total population of 150,700,000 persons of all ages in the Continental United States, 12,270,000, or 8.1 per cent, were 65 years of age or over. Three per cent of these, at the age of 65, are living in various kinds of institutions, and less than 10 per cent of those 85 or over.(1) Thus, almost all of the older persons in the United States are living outside of institutions and, even among those who are 85 years and older, slightly more than 90 per cent are living independently or with their family or friends. Degenerative diseases must, therefore, be of practical importance to the practicing physician. Among the most common of the degenerative diseases of the lungs is pulmonary emphysema. According to the classical descriptions, emphysema is divided into two main types: obstructive or infectious, and nonobstructive, often called senile.

The first type is infectious in nature with interference with the free flow of air between the alveolus and the major bronchi, such as in bronchiectasis, bronchiolitis, etc. In this condition there may be a complete obliteration of the smaller bronchi so that air cannot reach the alveoli,(2) and the lungs fill through the air-drifts of Van Allen and Lindskog(3, 4) and through the small segments of the lobe that have not been destroyed by infection. In this type of emphysema the bronchial arterial system is greatly increased in size and there is no loss of lung structure. There is work pointing to the fact that in grossly bronchiectatic areas the pulmonary arterial system shunts blood away from these regions into the normal functioning segments. This disease, when it is diffuse, is not amenable to surgical treatment but is best handled by medical measures.

The second type of emphysema originates in vascular disease of the bronchial arteries, which may be arteriosclerotic, vascular spastic, or any type of vascular disease affecting systemic blood vessels as the bronchial arteries are branches of the aorta. This bronchial arterial disease, in turn, affects the pulmonary arterial system through its vasa vasorum causing, in advanced cases, complete obliteration of the main stem pulmonary arteries and veins. Due to the nutrient nature of the bronchial arterial system, disease here causes loss of lung structure, such as the alveolar walls and actual loss of the major bronchi themselves in advanced cases — thus producing real loss of lung tissue, that is, vanishing lung disease, or bullous degeneration, or "cotton-candy lung." This process, occurring slowly, allows for replacement of lung tissue with proliferating collagen, similar to the process in the heart following coronary arterial obliteration. This pulmonary tissue is altered by the mechanics of respiration so that these inelastic stretched cysts rob the remaining good lung of inspired air and occupy the greater portion of space within the hemithorax, interfering with the function of the remaining good lung. In certain patients we have seen three segments of a lobe occupy almost the whole hemithorax. In contradistinction to the air-trapping phenomenon seen in huge subpleural blebs, there is no shifting of the mediastinum nor other evidence of increased pressure within these degenerated areas. At surgery, the pressure within these specimens is the same as that of the bronchus.

This latter type of emphysema is much more common than the one first mentioned, and occurs in all age groups though it is more prevalent in the older groups. Clinically, these patients have dyspnea on exertion only and are relieved by rest. Often there is no history of asthma or repeated respiratory infections. In stethoscopic examination of these patients there is an absence of breath sounds and one gets the

* Presented at the Scientific Sessions of the Annual Meeting of the Arizona Medical Association, Chandler, Arizona, April 26-28, 1954.

impression, in listening, that very little air is moving in and out of the bronchial tree in spite of the patient's labored efforts to breathe.

Fluoroscopically, there are often large areas of bullous degeneration. The diaphragm is flattened with little or no movement, denoting loss of elasticity of the lung and its inability to suck the diaphragm back to its normal relaxed dome-shaped position. On the roentgenogram, one notices an increase in antero-posterior diameter and a loss of lung markings. It is impossible to tell from the X-ray how much functioning lung remains in the chest. In bronchograms, lipiodol fails to fill the bronchi in the degenerated areas. Angiography reveals the degree of loss of pulmonary arteries and veins. This procedure is probably the best guide in determining the amount of functioning lung remaining.

Early manifestations of this disease are best seen on the X-ray film, where it is represented by an increased antero-posterior diameter of the chest and increased translucency in the lung fields.

Our concept of the etiology of this type of emphysema arose from observations made at the operating table. It was encountered during surgery for other disease, such as carcinoma, bronchiectasis, etc. This abnormal pathological-physiological state can only be seen at thoracotomy. Its observation and meaning are completely lost when the specimen is removed and forwarded to the pathological laboratory. Only when the diseased lung is still attached to its bronchi and blood vessels can one understand the principle of air-robbing and the loss of vascularity, both nutrient and ventilatory. It is easy to see why these patients are dyspneic because, on inspiration, the air flows readily into the degenerated areas and less into the good functioning lung.

At times it is extremely difficult to differentiate preoperatively between the dyspneic patient suffering from bronchospasm and bronchiolitis and the dyspneic patient suffering from dissolution and absorption of the actual lung structures due to disease affecting the bronchial arteries. A history of asthmatic attacks and repeated bronchial infections will make one feel that he is probably dealing with the first mentioned disease, while the patient with bronchial arterial obliterative endarteritis presents only with dyspnea on exercise. In this condi-

tion the symptoms are difficult to differentiate from those of cardiac failure.

X-rays and bronchograms will aid in the diagnosis of the first mentioned disease, while in the latter, if there are areas of bullous degeneration, one may well suspect bronchial arterial disease. In the former, the bronchial arterial system, in most cases, is increased so that surgery to attain better nutrient systemic blood supply and improve ventilation is contraindicated, while in the latter it is indicated.

Surgery for bronchial arterial obliteration consists of: segmental or lobar resection of the degenerated areas; a sympathectomy to increase the flow in the remaining bronchial arterioles; and removal of the parietal pleural barrier, as well as denuding of the endothoracic fascia so as to approximate the visceral pleura to the intercostal muscles and periosteum, to stimulate the ingrowth of collateral circulation from the chest wall for the purpose of preventing further destruction of the architecture of the lung. (5, 6)

In resecting these degenerated segments or lobes it is important to sever the bronchus close enough to the hilum so that the bronchial arteries are sufficiently viable to allow healing of the bronchial stump. The incidence of bronchopleural fistula in these patients has been high enough that all efforts must be made to utilize this principle, as well as to bring in a pleural or pericardial flap containing a blood vessel to facilitate healing. Such a flap has been described by Dr. Lyman Brewer.

Another altered pathological-physiological state found in these lungs at surgery is a paucity or absence of bleeding when one cuts deeply into these degenerated areas. This is especially well seen in areas that have not undergone complete bullous degeneration. This phenomenon can only be explained by the destruction of both the pulmonary ventilatory system and the bronchial arterial nutrient system. As the bronchial arteries supply the vasa vasorum of the pulmonary arteries and veins, disease in this system will, in turn, affect the other, causing the obliteration of both. Diseases inherent in the pulmonary arterial system, such as embolization, arteriosclerosis, etc., causing a decrease in its function will further its complete obliteration when the bronchial arteries are subjected to obliterative endarteritis.

In the main, patients who have come to surgery with this disease have been respiratory

cripples, in whom ventilatory studies could not be obtained because of their marked dyspnea. However, they have tolerated this type of surgery surprisingly well due to the positive pressure anesthesia.

The results have been gratifying, in that many of these respiratory cripples have been able to return to full or part-time productive activity.

Medical treatment precedes and follows the surgical measures, to promote longer lasting results.

First and most important in treatment is the education of the patient. He must be given a reasonably simple explanation, in nontechnical language, of what we are trying to achieve.

In obstructive or infectious emphysema, bronchospasm and drainage must be improved, and air-trapping reduced to lower the residual air.(7) In all cases, the patient must realize that he cannot smoke at all. Routine natural heliotherapy is used. Physical activity must be carefully regulated. These procedures take a long time and persistent effort on both the part of the patient and the physician.

Overweight must be corrected. Eating habits must be adjusted, and a hygienic routine closely adhered to. This does not mean a rocking chair type of existence. These patients are always better off with the proper amount of exercise and exertion, but the speed, extent, and duration of exercise must always be adequately controlled.

It is important that these patients get away from a costal type of breathing and use as much diaphragmatic function as is available. A simple explanation and a little practice can bring this about. We have been very pleased with the results of intermittent positive pressure breathing combined with a bronchodilator.(8) The type of apparatus we have found most satisfactory is the Bennett valve used with 100 per cent oxygen, though occasionally air will suffice, with Isuprel as a bronchodilator. When the secretions are thick and foamy, 50 per cent alcohol as an aerosol is helpful. A surface wetting agent, such as Alevaire, may at times be useful combined with intermittent positive pressure breathing.(9)

Pneumoperitoneum will be helpful when the diaphragms are markedly depressed.(10) Used for this purpose, of course, it is quite different from its use in tuberculosis, where a relatively

high rise in the diaphragm for the purpose of pulmonary relaxation is to be obtained. In the treatment of emphysema, a simple and rather mild cupping of the diaphragms is all that is required. Too energetic use of pneumoperitoneum in emphysema will easily throw the patient into heart failure. While this procedure of using pneumoperitoneum is effective, it is a bit tricky in emphysematous patients and must be watched carefully. Its use for this condition must be understood and the difference from its use in tuberculosis must be clearly outlined.

The greatest problem in emphysema is to be able to recognize it early, not in its end stages. We, ourselves, are just becoming aware of this urgent necessity. There are no long-time studies which will tell us how fast these processes will progress, and at what point one must take steps before severe symptoms eventuate. We must, then, be alert to the earlier and rather meager manifestations of emphysema in our patients. While we must avoid over-treatment, we must attack the disease early rather than late, and attempt to control the degenerative process rather than try to salvage respiratory cripples. However, even in the later stages, these procedures are worth while. As this new vista in emphysema is unfolding, prevention of this disease, or at least its early control, is the goal for which medicine should now be striving.

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PULMONARY HYALINE MEMBRANE — A CAUSE OF RESPIRATORY FAILURE IN THE NEWBORN*

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INTRODUCTION

THOSE physicians who are responsible for the care of newborn infants have seen respiratory distress and respiratory failure develop during the first few hours or days after birth. Microscopic examination of the lungs of these infants frequently reveals a pink staining material lining the alveoli and the smaller bronchioles—this is the so-called hyaline membrane.

This pulmonary hyaline membrane has been studied extensively during the past few years (1-8) and it is the purpose of this communication to present the results of these investigations as well as the current thoughts regarding treatment.

The photomicrographs used in this paper were prepared from pathologic material collected while the author was connected with the Department of Pediatric Pathology, University of Minnesota.

INCIDENCE

Pulmonary hyaline membranes are a frequent finding in the lungs of infants who die during the first few days of life. Miller(4) said that 90% of all infants over 1000 grams birth weight dying within the first 48 hours, excluding those infants having a serious developmental defect and those subjected to significant trauma, have pulmonary hyaline membranes. Clement Smith(7) said that in his series of 500 autopsies on newborns, pulmonary hyaline membranes were present in 50% of prematures and in 25% of the full term infants. In the newborn, this malady has been found to occur almost exclusively in those infants who are premature, post-mature or born by caesarean section. It is rarely seen in the full term baby delivered without complications by the vaginal route.

CLINICAL FEATURES

Clinically, those newborn infants having pulmonary hyaline membranes are able to establish respirations without difficulty. The cry and color usually are good immediately after birth. However, during the ensuing few hours or as late as the 3rd or 4th day diminishing respiratory exchange and labored breathing appear. Aus-

cultation of the chest may reveal the breath sounds to be "tight" and harsh, but usually no rales or ronchi are heard. The respiratory distress may be progressive and the retractions may become extreme. Death may occur from respiratory inadequacy and physical exhaustion during the first few days of life.

PATHOLOGIC FINDINGS AND PATHOGENESIS

The primary pathologic findings are limited to the lung. Grossly, the lungs usually show evidence of incomplete expansion. Microscopically, most of the lung is atelectatic with scattered areas of globular emphysema (fig. 1).

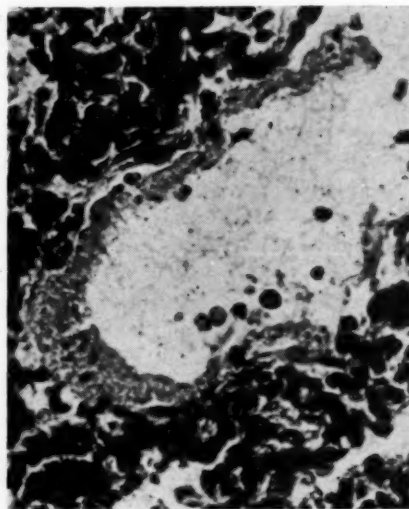


Figure 1. Photomicrograph (X 400) showing hyaline membrane lining the alveolar walls. From lung of male infant dying at 22 hours of age. Birth weight 2560 grams. Respiratory difficulty first noticed at age 5 hours.

Lining the walls of many of the alveoli and lying within the alveolar ducts is a pink-staining (with hematoxylin and eosin) homogeneous material—the hyaline membrane. This material is usually not present in the larger branches of the bronchial tree.

Farber and Sweet(9) in 1931 were the first to describe it and since it had a microscopic appearance and staining reaction similar to that of vernix caseosa, it was termed the "vernix membrane". Farber thought it was formed as the result of excessive respiratory activity en

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utero brought on by some complication of pregnancy and when the aspirated vernix was subjected to the mechanical effects of extra-uterine respiration it became plastered around the walls of the alveoli. Miller(5) in 1949, on the other hand, thought it was not due to aspiration of vernix or amniotic fluid because cornified epithelial cells were not frequently associated with the membrane. He believed that it may represent a reaction to some injury of the epithelium of the air spaces and that this unknown etiologic agent may also be the cause of the premature delivery of the fetus whose lungs are so injured. He mentioned the similarity of this hyaline membrane to the membrane seen in the lungs of those patients dying of pandemic influenza and of rheumatic pneumonitis.

In 1951, Miller(3) reported on the formation of a hyaline membrane in rabbits dying following midcervical vagotomy. These vagotomized rabbits died spontaneously in from 3 to 25 hours after surgery, of respiratory failure caused by pulmonary edema. Thirteen of the 20 rabbits had a hyaline membrane lining of the alveoli but it was not seen in those dying in the first 4 hours. Nine of the 10 living longer than 11 hours showed the membrane. He used many staining reactions in attempt to identify the composition of the membrane and concluded from these studies that it may be due to pulmonary edema and that the same process may be the cause of the hyaline membrane in infants.

Blystad, Landing and Smith(2) in reporting their studies on 509 consecutive autopsies on newborns, state that hyaline membranes are not formed of vernix or meconium but of the concentrated protein of aspirated amniotic fluid. These authors were able to produce similar membranes experimentally by repeated intratracheal injection of small amounts of amniotic fluid into the excised respiratory tract of animals while the lungs were alternately expanded and contracted for one hour. They felt that previous efforts to produce it by similar technique had failed because inadequate time was allowed for the formation of the membrane.

The pulmonary hyaline membrane is not limited to the lungs of newborn infants. It has been described in association with uremia, heart failure, radiation pneumonitis, rheumatic pneumonia, and influenzal pneumonitis. It has been puzzling that such diverse conditions produce

a similar microscopic finding in the lung, however, all of these conditions do have one thing in common. In each, the pulmonary alveoli are filled by a fluid which has a high protein content, yet which does not form significant amounts of fibrin and, therefore, does not organize. If, then, the water is absorbed from this fluid (and the lung is capable of absorbing water readily) the protein material is left behind as a sediment which coats the walls of the alveoli and smaller bronchioles. This layer of protein sediment stains pink and is what is described as the hyaline membrane.

The mechanism responsible for the presence of the fluid varies with the several disorders in which the membrane occurs. In the newborn infant, the source seems to be the amniotic fluid. This has raised the question of why do not all newborn infants have pulmonary hyaline membranes since it has been proven that intrauterine respirations occur normally(8), and therefore all fetuses have amniotic fluid within the lung. This is explained by the observations that the normal intrauterine respirations are shallow and the amount of amniotic fluid contained in each alveoli (fig. 2) is only a small fraction of the total volume of the alveoli after expansion occurs. It is only when deep intrauterine respirations occur that the alveoli become distended with amniotic fluid (fig. 3). When the water from this fluid is absorbed there is left behind a sediment which acts as

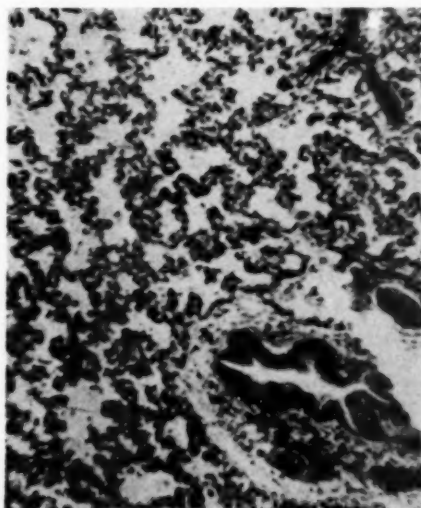


Figure 2. Photomicrograph (X 200) showing appearance of the normal fetal lung. The alveolar walls are separated by a small amount of amniotic fluid. From lung of stillborn weighing 4500 grams at birth.



Figure 3. Photomicrograph (X 100) showing appearance of newborn lung after deep intrauterine respirations have occurred. The alveoli are distended and many are filled with amniotic fluid. From lung of a full term stillborn. Birth weight 3860 grams. Intrauterine cranial decompression was done because of congenital hydrocephalus.

a barrier to the transfer of oxygen from the air into the blood stream. In addition, some of the smaller bronchioles are blocked by this material resulting in patches of atelectases while some of the functioning areas become emphysematous.

Clinically, it has been noted that when the hyaline membrane is found in the newborn infant, that infant is almost always premature, postmature or born by caesarean section. As for the premature infant, those situations which are responsible for delivery to occur early, such as placenta praevia, premature separation of the placenta, etc., also may cause poor placental circulation. If the impairment is severe enough, fetal hypoxia occurs and deep fetal respirations begin, resulting in the aspiration of amniotic fluid. The small size of the premature infant probably decreases the "squeezing out" of fluids during passage through the vaginal canal and the weakness of the premature infant renders him less able to cough and remove material which may be present in the upper respiratory passageways.

The postmature infant also may begin deep intrauterine respirations and aspirate amniotic fluid. Senescent changes in the placental circulation may become severe and result in fetal hypoxia.

The infant born by caesarean section, obviously, is denied the "squeezing out" of fluids so

apparent in the course of vaginal delivery but, in addition, he also may be subject to hypoxia. Experimental work has shown that incision into the uterine wall causes myometrial contractions which decrease the placental circulation. If the oxygen supply to the placenta and to the fetus is sufficiently impaired, deep intrauterine respirations may begin and aspiration of amniotic fluid occur.

TREATMENT

The most important phase of the treatment of the hyaline membrane in the newborn infant is directed toward the prevention of those factors causing prematurity, postmaturity, and the need for caesarean section. These problems, of course, are best understood by the obstetrician and will not be discussed here.

High oxygen content of the inspired air will give the infant a better chance of maintaining adequate oxygenation of his blood. Elevation of the foot of the crib and gentle suction of nose and pharynx will aid in the removal of secretions from the upper respiratory passageways. These have been standard treatment of respiratory difficulty of the newborn for some time.

But perhaps of greater importance is the maintenance of a high moisture content of the inspired air. High humidity will combat drying of the intrapulmonary material, whether it is aspirated fluid or normal secretions, and thus facilitate their removal either by cough or by the action of the tissue macrophages. This phagocytic process may explain why hyaline membrane has been described but rarely in the lungs of newborn infants living as long as 4 or 5 days and suggests that if the infant can be kept alive this long he will probably recover from this condition.

High humidity can be furnished by use of a simple device which can be set up in any hospital having incubators and oxygen equipment. A DeVilbiss nebulizer is taped to the inside of an incubator. The hole in the bulb of the nebulizer is plugged by a cork through which is inserted an intravenous needle. The needle is connected to a bottle of distilled water by means of standard intravenous tubing. The rate of flow of the distilled water must be so regulated that the water level in the bulb of the nebulizer is maintained at about $\frac{1}{2}$ full. An oxygen tank is attached to the nebulizer by means of the usual tubing and allowed to run at about 5 liters per minute. When the set-up

is operating properly, a cloud of nebulized moisture resembling fog can be seen issuing from the nebulizer. Such an apparatus can give a relative humidity of over 90% in an incubator.

Recently, certain detergents have been added to the nebulizer in an effort to further liquify the intrapulmonary contents. Early reports⁽¹⁰⁾ have been enthusiastic and detergents may prove to be a genuine aid in the treatment of the hyaline membrane.

SUMMARY

Certain newborn infants develop respiratory distress during the first few hours or days of life.

Microscopic examination of the lung frequently reveals a pink-staining, homogeneous substance lining the walls of the alveoli and smaller bronchioles—the hyaline membrane.

This membrane apparently represents a sediment which remains after water has been absorbed from amniotic fluid.

Newer concepts of treatment attempt to

lessen drying of the intrapulmonary material by use of increased moisture in the inspired air of the infant.

A simple apparatus consisting of a standard nebulizer and oxygen equipment has been described which can be utilized to increase the humidity in an incubator.

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PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the *New England Journal of Medicine*. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE

A forty-eight-year-old man was admitted to the hospital in coma.

Eight days prior to entry, the patient had an episode of nausea and vomiting. The next day he complained of occipital headache and pain in the posterior neck muscles; from time to time he pounded his forehead and complained of some headache there. Four days before entry he had some difficulty in walking, and his legs gave way on one occasion; there was no persistence of this complaint, and no striking weakness or dragging either leg was noted. Two days before admission he complained of difficulty with his vision while looking at television. During the week before entry he con-

tinued to have nausea and vomiting, and occipital and frontal headache. His legs gave way again the night before entry, but he managed to get to bed without assistance and later that evening he made a few irrational, incoherent statements. Four hours before entry, his wife awoke to find him unresponsive and breathing stertorously.

Nine months before admission he came home from work with the story of having "blacked out" but there was no further information about this episode. The blood pressure at that time was 175 systolic. The next day nausea, vomiting, and some weakness of the legs developed. After ten days he returned to work asymptomatic except for some buzzing in the ears. Six months prior to entry he became extremely irritable and often sat around apathetically not taking as much interest in current events as he had in the past. All these symptoms subsided within a month, he returned to normal, and there was no change until the present illness. His wife, however, believed that whereas he had often been difficult to get along with in the past, in the five months prior to admission he had had a definite personality change, becoming more tractable. He had had no con-

vulsions, ataxia or slurred speech. There had been no weight loss, chronic fatigue, cough bloody stools, abdominal discomfort or urinary difficulties.

Two years prior to entry the patient passed an insurance medical examination. There was no other past history of note.

Physical examination revealed an extremely cyanotic, deeply comatose man, with labored respirations and an obstructed airway. Because respirations had almost ceased at the time of admission an emergency tracheotomy was performed, with almost immediate restoration of normal breathing and disappearance of the cyanosis. He remained comatose but occasionally moved his arms and legs spontaneously; on several occasions nonpersisting alternating flexion-extension movements of the right leg were noted. The only response to external stimuli was withdrawal of the limbs to pinpricks. His eyes were in the mid-line, with no movement from side to side when his head was turned; the right pupil measured 4 mm., and the left pupil 3.5 mm., but both reacted promptly to light. Good visualization of the fundi could not be obtained initially, but eight hours later the right optic disk was thought to be elevated, with a hemorrhage, and some blurring of the left disk was noted. Corneal reflexes were absent bilaterally. There was questionable right facial weakness on supraorbital compression. The neck was not stiff. The extremities fell limply to the bed when picked up, and no extensor rigidity was noted on turning the neck. The deep tendon reflexes were all hyperactive 3 plus, with bilateral extensor plantar responses and bilateral ankle clonus. The palate was pulled over to the right. The lungs were clear. The heart rhythm was regular. There was a systolic murmur heard all over the precordium, but best along the left sternal border. There was a hard nonpulsatile mass, 6 by 6 cm., palpable deep in the right upper quadrant.

The temperature was 102°F., the pulse 94, and the respirations 10. The blood pressure was 160 systolic, 80 diastolic.

Lumbar puncture showed an initial spinal-fluid pressure equivalent to 540 mm. of water, with deep-yellow fluid. The supernatant fluid showed deep xanthochromia and gave a 2 plus Pandy reaction. The spinal fluid contained 210 crenated red blood cells, 4 neutrophils and

10 lymphocytes per cubic millimeter. Examination of the blood showed a hemoglobin of 15.5 gm., and a white-cell count of 31,700, with 89 per cent neutrophils. The urine gave a 3 plus reaction for albumin and a green reaction for sugar; the sediment contained 2 to 3 red cells and 2 to 4 white cells per high-power field.

A few hours after admission the blood pressure was 210 systolic, 110 diastolic, and it persisted at this range until three hours before death. The temperature remained in the vicinity of 100°F., the deep tendon reflexes gradually disappeared, vital signs became poor and the patient died 18 hours after admission.

DR. PHILIP E. RICE

Our case today had evidence of a progressively increasing intracranial disorder of eight days duration, beginning with nausea and vomiting, followed by occipital headache and later with some motor difficulty and disturbance of vision and finally entering the hospital in deep coma. He had had a short spell nine months previously, having blacked out followed by nausea, vomiting and leg weakness which passed in a few days. However he continued to note buzzing the ears. Six months before present illness there had been irritability and apathy lasting less than a month, followed by a possible personality change. Physical examination confirmed the presence of a serious intracranial process as demonstrated by coma, spontaneous arm and leg movements, no response to external stimuli except withdrawal of limbs, elevation of right optic disc with hemorrhage, blurring of left disc and slight inequality of pupils, which, however, reacted to light. Corneal reflexes were absent and there was questionable right facial weakness. There was no stiff neck and paralysis was flaccid rather than spastic. All tendon reflexes were hyperactive and there was bilateral Babinski and ankle clonus.

Up to this point we can assume that there was a cerebral process, possibly a slow hemorrhage into a pre-existing lesion, of a gradually progressive nature over eight days. Because of the small amount of blood in the spinal fluid, the slow progression and lack of stiff neck, I feel that this was intracerebral rather than subarachnoid. The past history makes us suspect that there was a nearly silent pre-existing lesion of some kind in the brain.

Then we reach the finding of a hard non-pulsatile mass 6 x 6 cm felt deep in the right upper quadrant. Such a mass could arise from the kidney, adrenal, gall bladder or liver. The absence of history of pain or digestive disorders seems to make the gall bladder and liver less liable to be the sites of origin. Also we have no basis to suspect a tumor arising from either the medulla or cortex of the adrenal. Likewise a kidney tumor having connection with the renal pelvis seems unlikely with only 2 to 3 red cells in the urine. This right upper quadrant tumor reached considerable size without causing symptoms, hence I suspect that it lay outside the various organs of this area. The exception would be the liver which especially in the left lobe, may contain large asymptomatic tumors.

In trying to connect the cerebral lesion to the tumor in question, it would seem that a metastasis would probably have to be secondary to a lung metastasis. We have no chest X-ray to prove or disprove this. So a right upper abdominal malignancy (such as hypernephroma, hepatoma, or melanoma) with metastasis is a likely possibility.

However we cannot be sure this was not an inflammatory process. The temperature readings recorded were 100° to 102°, the white count was 31,700 with 89% neutrophils. This may have indicated a terminal pneumonia. If the original process was infective it must have been of a subacute or chronic type as the past history revealed no chills, fever or other evidence of infection. We are given no history to suspect tuberculosis, but this does not rule it out and the same applies to the mycotic infections. Amebiasis is usually but not always preceded by a bout of dysentery but it cannot be eliminated from consideration.

From here on we must start guessing — which is a bad practice — hence I will give as the two possible diagnoses in this case:

1. Tumor of right upper quadrant such as hypernephroma, melanoma or hepatoma, with cerebral and other metastasis and a terminal pneumonia.

2. Liver abscess, possible amebic, with cerebral metastatic process.

DIFFERENTIAL DIAGNOSIS

DR. W. H. TIMBERLAKE: The nine-month course of this patient's illness was characterized by the episodic appearance of symptoms and

their subsidence. This is not the usual course of a brain tumor but rather of vascular disease. In the last attack, beginning eight days before entry, there was nausea, vomiting, frontal and occipital headache, and neck pain. These symptoms are unusual in thrombosis or embolism except occasionally when the arteries of the brain stem are affected. However, they are a common constellation of symptoms when there is bleeding. Presumably, the headache is partially due to disruption of the vessel wall and adjacent meninges. When the headache is well localized, it may be a reliable indication of the side on which the lesion lies. Increased intracranial pressure may also be a factor in causing headache as well as the nausea and vomiting. The neck pain seems to be due to breakdown products of the blood irritating the cervical nerve roots as they pass through the subarachnoid space. This irritation, like that of meningitis, results in stiffness of the neck. The stiff neck may not be detectable for the first day or two, and it may, as in this case, be masked by coma. In the case under discussion the lumbar puncture confirmed the diagnosis of bleeding into the subarachnoid space. The initial pressure of the spinal fluid was increased, there were 210 red cells, and the fluid was deep-yellow color although there was only a 2 plus Pandy—that is, the color was not due to increased protein. Crenation of red cells may occur rapidly, and the yellow color of the supernatant fluid is a more reliable way to tell that this was not just a bloody tap.

In the absence of trauma, subarachnoid bleeding may occur in several conditions. When an intracerebral hemorrhage ruptures into a ventricle the blood follows the course of the cerebrospinal-fluid circulation out through the apertures of the fourth ventricle into the subarachnoid space. Usually, such patients have arteriosclerosis and a diastolic blood pressure over 100. They quickly become comatose and remain comatose until their death a few days later. Such was not the course in this case.

Infrequently, tumors of the brain bleed into the subarachnoid space. Angiomas may bleed repeatedly over a long period, and angiomas tend to cause epileptic convulsions. In the absence of these two items in the history, the diagnosis is only a guess until confirmed by x-ray demonstration of calcification in the typical pattern, or arteriography. Gliomas and

metastatic tumors have caused fatal subarachnoid hemorrhage in only 5 cases each, as confirmed by post-mortem examination here, in the past twenty-five years. I have no reason to suspect either, from the course of the neurologic symptoms. However, the mass felt in the right upper quadrant, together with the red cells in the urine, made me wonder about a renal-cell carcinoma, a tumor that may metastasize to the brain and may cause subarachnoid hemorrhage. The patient was too ill for x-ray studies, and there is insufficient evidence to establish this diagnosis.

Infected emboli in patients with subacute bacterial endocarditis may cause mycotic aneurysms, which rupture into the subarachnoid space. The history and findings give no basis for that diagnosis, nor for two other exceedingly rare causes of fatal subarachnoid hemorrhage-thrombosis of dural venous sinuses and hemophilia.

I now come to the common cause of subarachnoid hemorrhage-rupture of a congenital aneurysm. (Arteriosclerotic and syphilitic aneurysms almost never rupture.) Congenital aneurysms are probably due to a developmental defect of the muscle layer in the crotch of an arterial bifurcation. The weak area gradually bulges until the thinned wall gives way. Rarely do these aneurysms cause symptoms by direct pressure. They may cause symptoms by bursting at any age. In this hospital the age when rupture first occurred ranged from four to seventy-nine years, with a maximum number in the fifth decade, the age of this patient. The first rupture occurred at rest or during light activity in half the cases.

These aneurysms are usually located in a distal angle of the circle of Willis or at the main bifurcation of the middle cerebral artery. Almost half the aneurysms are located where the internal carotid joins the circle so rupture it likely to implicate the adjacent third nerve. Thus the common finding of ptosis, weakness of extraocular muscles supplied by the third nerve and a dilated pupil on the side of the aneurysm is not surprising. The transient blurring of vision of this patient two days before entry was not well enough described to be identified as diplopia, and in view of its late appearance and the absence of ptosis I think this symptom is more likely to have been related to the developing papilledema. Other

aneurysms are difficult to localize.

The infrequent aneurysms of the basilar artery or its branches sometimes rupture into the adjacent basal cisterns of the subarachnoid space, and no focal symptoms result until clotting closes this path and later bleeding disrupts cerebral substances, or clotting in the aneurysm thromboses the vessel with infarction. Intracerebral rupture is seen even with aneurysms of the basilar artery terminally but is most likely to occur with the aneurysms that lie in the cerebral fissures, aneurysms of the middle cerebral and of the anterior-cerebral, anterior-communicating artery bifurcations. Either of these may rupture into the frontal lobe and one can only infrequently distinguish them, as for instance when the middle cerebral aneurysms ruptures into the parietal lobe. In the present case there may be another localizing hint.

I think the "black out" that the patient had nine months before entry represented the first leakage of the aneurysm. The nausea and vomiting the next day are common symptoms. One can only speculate that he probably had the usual initial severe headache. The weakness of the legs then, and again the last attack, may indicate that I am dealing with an aneurysm of the anterior cerebral artery. The leg area of the precentral cortex is supplied by the anterior cerebral arteries. Aneurysms of the anterior cerebral arteries are not infrequently associated with an anomaly of the circle of Willis in which one anterior cerebral artery is a tiny vessel from the carotid to the anterior communicating artery, and the distal portions of both anterior cerebral arteries in effect arise from a common trunk, with the aneurysm in the crotch between them so that it might disturb bloodflow bilaterally.

The personality change six months before entry suggests disturbance in frontal-lobe function and may have represented the first intracerebral bleeding. The "irrational, incoherent statements" made the night before entry apparently were not aphasic in character and may only have been the result of the rising intracranial pressure that finally led to coma. The right facial weakness is an indication that rupture was into the left frontal lobe. Though both arms and legs moved, there appears to have been some simple repetitive activity of the right leg, again suggesting irritation on the left. The bilateral flaccidity with increased

deep reflexes should mean disturbance in the posterior part of both frontal lobes, and so there was probably some extension of the intracerebral blood into the right frontal lobe.

The absent corneal reflexes and eye movements probably reflect the depth of coma and are not localizing.

On entry the patient had an obstructed airway, which was promptly relieved by tracheotomy. Although the vocal cords are not described I suspect this man had bilateral abductor paralysis of the vocal cords due to secondary hemorrhage of the brain stem. The asymmetry of the palate suggests that the hemorrhage was primarily on the left.

Other congenital anomalies were found in 7 of the 68 cases examined post mortem here; 2 of these included polycystic kidneys. The mass in the right upper quadrant may have been a polycystic kidney.

A temperature of 101 to 102°F. and mild leukocytosis commonly accompany subarachnoid hemorrhage. About 1 patient in 20 has transient albuminuria or glycosuria. Despite the fact that this patient passed an insurance examination two years prior to admission I think the elevated blood-pressure readings were probably the more representative ones and an elevated blood pressure makes for a poorer prognosis in these patients.

My first choice of diagnoses is intracranial aneurysm of an anterior-cerebral, anterior-communicating artery bifurcation, with rupture into the left frontal lobe, with some extension into the right and with secondary medullary hemorrhage, and polycystic kidneys; my second is ruptured aneurysm of the basilar artery; and my third is renal-cell carcinoma with intracerebral metastases.

DR. CHARLES S. KUBIK: There was only a small number of red cells in the spinal fluid; what do you think of that?

DR. TIMBERLAKE: I think the terminal bleeding was mainly into the cerebral hemisphere and that little of it went into the subarachnoid space. These red cells were probably residual from the event a few days before.

DR. WILLIAM H. SWEET: There was not time to do the test on this patient I am going to suggest. When the yellow color of the spinal fluid test on the spinal fluid may aid one in solving the problem. A positive test for bilirubin would suggest that the color was indeed

due to hemorrhage, as Dr. Timberlake has assumed.

DR. BENJAMIN CASTLEMAN: But if there were a tumor that was necrotic and bled, one would get the same result.

DR. SWEET: Yes; that is not quite as likely as a tumor that leaks protein into spinal fluid and gives a yellow color without bleeding.

DR. KUBIK: In those cases one would expect to find a high protein. This was not high.

CLINICAL DIAGNOSIS

Congenital aneurysm of anterior cerebral artery.

DR. TIMBERLAKE'S DIAGNOSIS

Ruptured aneurysm of anterior cerebral or basilar artery and polycystic kidneys.

Renal-cell carcinoma, with intracerebral metastases.

ANATOMICAL DIAGNOSIS

Renal-cell carcinoma, with multiple hemorrhagic metastases to brain.

PATHOLOGICAL DISCUSSION

DR. EDWARD P. RICHARDSON, Jr.: There were many scattered hemorrhagic lesions in both cerebral hemispheres and cerebellum, with one in the medulla. From one of these lesions bleed entered the left lateral ventricle. Each one of these lesions consisted of a nodule of tumor tissue completely infiltrated and surrounded by hemorrhage.

DR. CASTLEMAN: The source of the tumor was in the lower pole of the kidney, and microscopically the tumor was a classic renal-cell carcinoma with the clear cells throughout. We found no evidence of tumor anywhere else at the autopsy. There was no tumor in the renal vein and no tumor in the lungs so that the tumor must have reached the brain via the vertebral veins as has been so beautifully demonstrated by Batson. At the recent meeting of the American Association of Pathologists in April an interesting paper was read in which the authors suggested another way that a tumor may metastasize to the brain. Zeidman and Buss introduced a suspension of tumor cells—one of the common experimental tumors—into the venous circulation of rabbits and at the same time withdrew arterial blood from the abdominal aorta. This arterial blood was then injected intravenously into another series of animals, in 50 per cent of which tumor nodules appeared. These experiments suggest that the tumor cells would have to go through the

capillaries of the lungs immediately to get into the abdominal aorta.

DR. KUBIK: The theory that the tumor cells

pass through the lungs seems more likely than that cells would travel against the currents of the blood in the vertebral veins.

BASIC *Science* SEMINAR

THEORIES OF NARCOSIS

By Roger Seyferth, M.D.

THE term narcosis is of Greek derivation indicating a state of profound unconsciousness. Basal narcosis refers to a situation involving not only deep sleep or stupor but also analgesia. In the final analysis, probably there is no sharp division between the two except for the level of stupor. The deeper the stupor, the greater the extent of analgesia. Of course, it is possible to produce profound analgesia of various parts of the body without unconsciousness.

The study of narcosis necessarily involves the study of physiology and pharmacology. The clinical application of these studies has resulted in the art and science of anesthesia. Thus, a short consideration of the history of anesthesia is not amiss.

It is known that the Egyptians practiced surgery and they probably made use of various narcotics. Hashish was employed by the Chinese for analgesia and Pliny, Dioscorides and Apuleius recommended Mandragora (belladonna alkaloids) for premedication before surgical procedures. Various methods in addition to drugs were devised to render patients unconscious prior to surgery, such as the Assyrian policy of asphyxiating children before circumcision, and the production of cerebral concussion by striking a wooden bowl placed on the head. For years morphia, hyoscine and alcohol were the main drugs used.

In 1807 Baron Larry performed painless amputations, using ice, on the battlefield. Of course, everybody is familiar with the achievements of Long, Wells, and Morton during the epoch making years of 1842-46 during which time the virtues of ether and nitrous oxide were presented to the world. It is interesting to note that a period of 302 years had elapsed since the discovery of sweet vitriol (ether) by Valerius Cordus in 1540.

In consideration of the various theories of

narcosis, the phenomenon of sleep is a logical starting point. The state of more or less complete unconsciousness which is designated as sleep forms a part of the physiology of the brain which naturally has attracted much attention. In all living things there occur periods of rest alternating with periods of activity. Whether these periods of rest are essentially similar to sleep in man is a question of speculative probability. Sleep from this standpoint is a period of comparative inactivity, during which the constructive or anabolic processes are in excess of the disassimilatory changes of catabolism. Sleep in the brain tissues probably applies to similar phenomenon in other tissues such as glands.

The physiological relations of the body during sleep have been well studied and it is noted that the body processes go on much as in the waking state. Those changes that do occur are mostly an indirect result of the partial or complete cessation of activity in the cerebrum. A fact of interest is that the entire cortex does not fall asleep at the same instant nor always to the same extent. As sleep sets in, the power to make conscious movements is lost first and auditory sensibility last. On awakening, the reverse holds true. The person may be conscious of sound before he is sufficiently awake to voluntary movements.

The intensity of sleep (depth of unconsciousness) has been fairly well worked out to show that the greatest intensity is reached about an hour after the beginning, and from the third hour onward the depth of sleep is very light. The activities of the brain lie just below the threshold of consciousness. It is also a matter of common knowledge that the recuperative effect of sleep is not directly proportional to its intensity.

A brief statement as to some of the theories

of sleep follows:

1. Accumulation of acid waste products. This accumulation in the blood brings on a gradually increasing loss of irritability or fatigue in the brain cells which results in a depression of their activity, causing a loss of consciousness.

2. Consumption of intramolecular oxygen. The brain cells during the waking hours use up their store of oxygen more rapidly than it can be replaced by absorption of oxygen from the blood.

3. Toxin theories. Some special toxin or hormone is formed during the waking hours which finally accumulates in sufficient quantity to inhibit the activity of the cortical cells.

4. Neuron theory. The connection between cells in the cortex and incoming impulses along afferent paths is interrupted mechanically by contraction of the dendrites and thus isolating the cortical cells from all possibility of external stimulation.

5. Inhibitory theory. Sleep is simply a spreading of the process of internal inhibition to the entire cortex.

6. Anemia theory. That sleep is produced because of a physiologic reduction of blood supply to the brain; based upon a loss of vasomotor tone.

7. Fatigue of neuromuscular mechanisms. Muscle fatigue, incurred during the day by constant activity, causes a decrease in the flow of proprioceptive impulses from the muscles, causing a functional break between the cerebral cortex and the lower portions of the central nervous system.

8. Sleep centers. The assumption of a sleep center, possibly in the thalamus, which produces sleep either by excessive activity or inhibited activity. It is of interest to note that in specific diseases characterized by lethargy or sleep such as the various encephalitides, there are detectable pathological changes in the thalamus and basal ganglia of the brain.

Progressing now to the chemical basis of proposed mechanisms of narcosis as produced by drugs, it is to be seen that most of these theories are based upon chemical, physical, or physical-chemical phenomenon illustrated by experiments upon actual living cells, or in vitro systems constructed to simulate cells. They may all be grouped under the following classification as described by the Adriani—

1. Those which postulate the effects of the

drug are due to a specific solubility in certain cellular constituents, e.g., a high lipid solubility.

2. Those which postulate changes in cell metabolism which result from physio-chemical phenomenon induced by the drug, e.g., cell colloidal changes, or change in surface tension.

3. Those which propose alteration of oxidative processes by either depriving the cell of oxygen or modifying the cells power to use oxygen.

4. Those based upon changes in physical phenomenon such as reversal of electrical polarity of cerebral cells from the observed normal.

A brief statement describing some of these theories follows:

1. The simple and early belief that narcosis is caused merely by asphyxia.

2. Claude Bernard's theory that narcosis is due to a reversible coagulation of the constituents of the nerve cells.

3. The Meyer-Overton theory which assumes that the action of anesthetics is due to the fact they are soluble in and are taken up by the liquids of nerve tissue.

4. Lillie's theory that narcotics produce their effects by modifying cellular membranes, making them more resistant to changes of permeability. Since variations of permeability are essential to stimulation, the irritable tissue is thus rendered temporarily insensitive.

5. Verworn's theory that the depression of the neuron is due to suppression of the power of the cell to use oxygen inasmuch as narcosis is accompanied by diminished oxygen utilization.

6. Burges' electrical theory of narcosis which claims that narcotics cause a decrease in the electronegativity of the brain cortex so that the brain cortex is electropositive. The loss of negative potential is due to the blocking of the passage of negative charges into the cortex through sensory fibers while motor fibers are left free to conduct the negative charges away, thereby rendering the cortex electropositive.

A practical classification of the action of narcotics on the body may be described as—

I. Uptake; II. Fixation; III. Biological response.

The physical phenomenon known as absorption and water solubility are accepted by most authorities as adequately explaining the body's uptake of a narcotic agent whether gaseous or liquid.

In explaining fixation, opinions differ widely and are extremely varied. One of the more recent theories is that of Wheatly and Quastel the chief exponent of which is T.A.B. Harris in Britain. The theory is briefly described as follows:

A. The cell membrane is a true entity.

B. Narcotic drugs exert their pharmacologic action on the cell membrane and not in the interior of the cell.

C. In the cell membrane are "active patches" or specific receptors which combine with the narcotic mass.

D. There is an uptake of the narcotic mass by certain enzymes within the cell; narcotics inhibit the action of this enzyme but in a reversible manner.

E. Narcotics do not interfere with the access of oxygen to living cells or with the uptake of oxygen by cells.

F. This selective inhibition of a particular form of metabolic activity applies to both aerobic and anaerobic forms of life.

G. Carbohydrate is used exclusively by the brain as a source of energy.

H. Thus there is an inhibition of the oxidation of glucose and pyruvic and lactic acids which diminishes the energy available for the cell to accomplish its normal functional activity and so produces a state of narcosis.

Clinically the biological response of the body to narcotics is uniform and authorities are in more or less agreement. Hughlings Jackson summed up the matter of susceptibility to narcotics in the following generalization. "The last (cells) to come (in the order of evolutionary development), the first to go." Thus the following sequence is demonstrable—memory loss; cooperative stupor; non-cooperative stupor; loss of consciousness; loss of reflex activity to external stimuli; loss of muscle tone in striated muscle (except diaphragm); failure of respiratory center; failure of vasomotor center; failure of cardiac center. Recovery from narcotic administration occurs in reverse order.

It will be seen from reviewing the extensive literature concerning the effects of narcotics drugs upon the body, that many changes from the normal occur, such as those on blood pressure, heart rate, respiration, kidney infection, gastro-intestinal function and liver function. A few of the theories of narcosis are similar to

some of the theories of sleep but in the main, the chief difference implied lies in the suggestion that in sleep the cortical cells are by some functional mechanism disassociated from the remainder of the central nervous system while in narcoses, the cells are depressed in function. It is an undeniable fact that the patient does not awaken from a state of narcosis feeling refreshed and rested as he would from normal sleep. We can probably assume that in a state of narcosis, the anabolic activities of the body are in no way comparable to their activity during normal sleep. The one fact to be ever always remembered is that all truly narcotics agents are central nervous system depressants. This includes the list of drugs from ether to morphine. The clinical deduction obtained from this basic physiological and pharmacological concept of narcosis and sleep is that it is far better to attempt to cure insomnia not by the simple and widespread method of prescribing sleep-inducing potions but rather by intrigue and suggestion such as a warm bath, a night cap or hot toddy, or a brisk bit of evening exercise.

Not too many years ago it was well proven that man possessed five senses: tactile-pain, taste, hearing, sight, and smell. It is known now that afferent impulses passing through posterior root fibers consist of pain, tactile, thermal sensation, deep or muscle sensation from bones, joints, tendons etc., and afferents from the viscera. The pathways carrying these sensations in the central nervous system have been well described and use of this knowledge made in everyday spinal analgesia for both medical and surgical purposes. It is commonly observed that if an administered spinal anesthetic extends to the upper thoracic region, the patient tends to become drowsy. In addition, if a general anesthetic is now given only a very small amount is necessary to produce unconsciousness and respiratory arrest is apt to follow with doses which would not have this effect if the patient were not under a spinal anesthetic.

Purdon Martin has pointed out that consciousness is maintained by "an awareness of the body" and of environment. Consciousness lapses in the absence of sensory impulses to the cortex. It is obvious that the higher a spinal anesthetic spreads, the more the awareness of the body is diminished. The area from which

Amebiasis¹ a "Poorly Reported" Disease

Until serious complications arise, amebiasis may pass unrecognized and patients receive only symptomatic treatment.

Although amebiasis is a disease with serious morbidity and mortality, statistics on its incidence¹ are incomplete because its manifestations are not commonly recognized and consequently not reported.

"Vague symptoms² referable to the gastrointestinal tract, such as indigestion or indefinite abdominal pains, with or without abnormally formed stools, may result from intestinal amebiasis. Not infrequently in cases in which such symptoms are ascribed to psychoneurosis after extensive x-ray studies have been carried out, complete relief is obtained with antiamebic therapy."

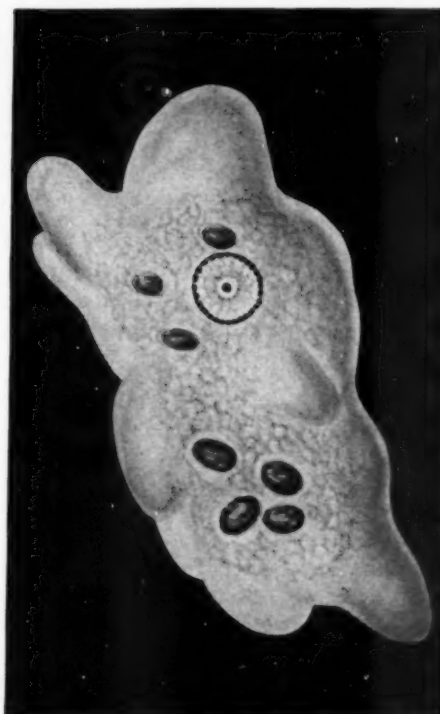
To prevent possible development of an incapacitating or even fatal illness and to eliminate a reservoir of infection in the community, diagnosing and treating³ even seemingly healthy "carriers" and those having mild symptoms of amebiasis is advised.

Early diagnosis⁴ is important because infection can be rapidly and completely cleared, with the proper choice of drugs and due consideration for the principles of therapy. For treatment of the bowel phase these authors find Diodoquin "most satisfactory."

For chronic amebic infections, Goodwin⁴ finds Diodoquin to be one of the best drugs at present available.

Diodoquin, which does not inconvenience the patient or interfere with his normal activities, may be used in the treatment of acute or latent forms of amebiasis. If extraintestinal lesions require the use of emetine, Diodoquin may be administered concurrently. It is a well tolerated and relatively nontoxic orally administered amebicide, containing 63.9 per cent of iodine.

Diodoquin (diiodohydroxyquinoline), available in 10-grain (650 mg.) tablets, reduces the course of treatment to twenty days (three tablets daily). Treatment may be repeated or prolonged without



Endamoeba histolytica (trophozoite).

serious toxic effect. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

1. Hamilton, H. E., and Zavala, D. C.: Amebiasis in Iowa: Diagnosis and Treatment, *J. Iowa M. Soc.* 42:1 (Jan.) 1952.

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3. Weingarten, M., and Herzig, W. F.: The Clinical Manifestations of Chronic Amebiasis, *Rev. Gastroenterol.* 20:667 (Sept.) 1953.

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the cortex received stimuli is lessened. If the solution spreads to the foramen magnum, sensory stimuli from the body are eliminated and the patient remains awake by virtue of stimuli reaching the cortex from the cranial sensory nerves.

When a person attempts sleep, he does what he can to eliminate outside stimuli. The room is dark, noises absent, supine position to decrease proprioceptive impulses, etc. A conscious person certainly is in possession of some of his senses. The moot question remains—if a person is deprived of his senses, can he remain conscious. All available evidence would seem to indicate that a state of narcosis most likely will result if all sensory impulses are interrupted to the cortex. Other questions naturally follow. How deep a stupor will result? Would the various vital centers in the brain stem continue to function? This line of logic would lead one to suspect that perhaps Lillie's theory of narcosis (rendering the irritable tissue of the cortex temporarily insensitive) might have more than a little merit.

It is of interest to note that within the past two decades in anesthesia, the pendulum has swung more and more away from the old gas general anesthetic agents to newer and better general and local anesthetic drugs with other means of enabling surgeons to obtain excellent muscular relaxation and still keep the patient in a very light plane of anesthesia. By this I am referring to Curare and Curare-like drugs such as Anectine. Most anesthetists dislike the thought of having to maintain patients in a deep anesthetic plane for long periods of time. Indeed, the good anesthetist will make the surgeon hard pressed to finish suturing the skin before the patient wakes up. The point is, in a deep plane of surgical anesthesia, the border between here and the hereafter is not always too well demarcated. Furthermore, with light anesthesia the incidence of post-operative anesthetic complications will be decreased.

Thus, the anesthetic of the future would ideally accomplish the following:

1. Do away with cortical cell depression and instead selectively interrupt only the required sensory impulses from reaching the cortex.
2. Not affect motor fibers at the level of the central nervous system but only at the operative site.

3. Promote the processes of anabolism as in sleep.

SUMMARY

1. Definition of narcosis.
2. Brief insight into the history of anesthesia.
3. The phenomenon and theories of sleep.
4. Mechanisms and theories of narcosis.
5. Comparison of sleep and narcosis.
6. Thoughts as to the maintenance of consciousness.

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NEWS ITEM

MEDICAL SECRETARIAL SERVICE.

Mrs. Zelma O. Simson and Mrs. Patte Joy, both trained medical secretaries, announce the establishment of Patte-Zoe's Medical Secretarial Service, with office at 1925 W. Holly. They offer some services which they claim to be unique, including direct dictation over telephone to the dictating machine at the office of this Service — day or night, 9 a.m. to 9 p.m. They hope to expand this to a twenty-four hour service. Or the doctor may use his own dictating machine, have the discs or records picked up, transcribed and the transcriptions accurately made and delivered back to him promptly. Mrs. Simson will be remembered by many doctors in the community for her long service in the record room and x-ray department at Good Samaritan Hospital.

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Schaerr, W. C., J. Missouri M. A., 37:287.

THE *President's* PAGE

THE SCIENTIFIC ASSEMBLY COMMITTEE

THE SCIENTIFIC ASSEMBLY COMMITTEE OF THE ARIZONA STATE MEDICAL ASSOCIATION HAS HAD ITS FIRST FORMAL MEETING AND THE CHAIRMAN OF THIS COMMITTEE, YOUR PRESIDENT-ELECT, DR. HARRY E. THOMPSON, HAS ALREADY ACCOMPLISHED A GREAT DEAL. THE PREPARATIONS FOR THE SCIENTIFIC PORTION OF THE MEETING HAVE BEEN RAPIDLY ADVANCING AND IT APPEARS THAT THE MEETING WILL HAVE A WIDE APPEAL TO THE MEMBERS OF THIS ASSOCIATION. A PARTICULARLY ACTIVE GROUP WILL BE THE AMERICAN ACADEMY OF GENERAL PRACTICE WHO WILL HAVE SOME VERY WORTH WHILE SEMINARS. EVERY EFFORT WILL BE MADE TO HAVE THE ENTIRE PROGRAM COMPLETED BEFORE THE END OF THIS YEAR AND IT IS IMPERATIVE THAT THE CHAIRMAN OF THE SPECIAL SOCIETIES WITHIN THE ASSOCIATION CONTACT DR. THOMPSON PRIOR TO THE 1ST OF SEPTEMBER, THUS ASSURING THEIR SPEAKER OF A PLACE ON THE PROGRAM.

CORDIALLY YOURS,

OSCAR W. THOENY, M. D.
PRESIDENT

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
 2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
 3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
 4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
 5. Submit manuscript typewritten and double-spaced.
 6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
- The Editor is always ready, willing, and happy to help in any way possible.

CORTISONE AND EMERGENCY SURGERY

CORTISONE is so effective in causing atrophy of the adrenals, that indications for surgical adrenalectomy are doubtful except in cases of severe malignant hypertension or in some cases of Cushing's syndrome. However, medical adrenalectomy is rarely desired, except in some instances of inoperable carcinoma of the prostate or breast. This loss to the endocrine system of the adrenal function is being seen with increasing frequency, particularly here in the Southwest with the many patients who have asthma, arthritis, or another of the collagen diseases. In many cases, the patient is maintained for long periods on Cortisone with no

rest period nor intervening periods of ACTH stimulation. Post-mortem examination in this group shows an atrophy of the adrenals to 5% of their normal size, glands which are physiologically of less use than their minimal anatomical size.

Occasionally these patients are suddenly subjected to added stress, as an accident or emergency surgery, and they do not have the necessary reserve to meet the increased demand placed upon them. If adequate supplemental endocrine therapy is not immediately administered they may go into irreversible shock, with prompt death, or death in 5 to 6 to 12 hours. When emergency surgery becomes necessary in a patient who has been on long term Cortisone therapy the products of adrenal secretion must be increased, not decreased; the fear of delayed wound healing is to be ignored. If 2 to 3 days of preparation is possible prior to surgery the problem is greatly minimized. The adrenals should be stimulated by ACTH injections. The patient should receive at least 25 mg. of Cortisone by mouth every 6 hours, additional Cortisone intramuscularly, 6 mg. of DOCA daily, and 10 mg. of DOCA in the AM prior to surgery. About one hour prior to surgery 50 cc. of the aqueous adrenal cortical extract should be started in 1000 cc. of 5% glucose in normal saline or, preferably replace the aqueous extract with lipo adrenal extract. During the operation the supplemental therapy as lipo adrenal extract or aqueous cortical extract must be continued, using Levophed in the parenteral fluids and adequate blood replacement. If surgery must be performed immediately adrenal cortical extract becomes of utmost importance along with Levophed and blood. Simultaneously, give parenteral DOCA and Cortisone. When available the intervenous preparation of Compound F will prove extremely helpful.

This is not an uncommon problem in the Southwest. The medical man must allow periods of regeneration of the adrenals by intervening rest periods or periods of ACTH stimulation. The surgeon in turn must be cognizant of the danger of added stress to these patients on prolonged Cortisone therapy, who respond as patients with true Addison's disease.—D.W.N.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

AN important attitude towards COCCIDIOIDOMYCOSIS has been described by Levan in 'California Medicine', and it should be of interest to Arizona . . . 'Cox', as it is called, may have an OCCUPATIONAL origin and may be of MEDICO-LEGAL importance. Levan is from Bakersfield, in the 'valley' or 'desert' area from which the disease got two of its other names . . . Some cases have been accepted as compensable by insurance carriers, the Industrial Accident Commission, and the courts . . . Factors which may determine compensability are found in the following situations, 1. Laboratory infections; 2. Infection from contaminated articles, outside of an endemic area; 3. Infection of employees entering an endemic area in the course of their occupation; 4. Primary cutaneous inoculation; 5. Localization and/or aggravation of pre-existing 'cox' by occupational injury; 6. Infections in agricultural workers imported to endemic areas; 7. Infection of residents of endemic areas alleged to result from occupational exposure . . . The author describes cases in each group, and it makes serious reading. It often requires keen medical and legal detective work to find origins and proof . . . Ideally the criteria should include evidence that the person was free of disease before exposure (though this may be hard to get); there should be no chronologic discrepancies between exposure and onset; the working conditions should clearly include exposure; and exposure outside of employment should not exceed that of the occupation . . . The start of an action to establish a case as occupational is a function of the physician, it is said.

The HAZARD to a community, and to the reputation of a community, can clearly be noted in the preceding paragraph. It seems logical that EPIDEMIOLOGIC studies be stepped-up, that basic research be increased to find A VACCINE OR A THERAPY, and that physicians and the public be alerted to use INFECTIOUS DISEASE PRECAUTIONS in the care of open cases . . . Rosenthal of Chicago is one of the few researchers who believe that infection may result directly from a cavity case, and his infections were produced in animals. Nevertheless, organisms are developed in the soil and carried in the dust, and they can not get to the soil (or certain animal vectors) without contamination from human sources . . . It is just as logical to prevent expectoration, etc., by patients with the disease as it is for TB; perhaps more so because of the growth of the fungus in the soil . . . The at-

titude of physicians is too often to observe the lesion, and to let the patient freely roam, rather than to shut off the source by precautions, (or by resection).

THERAPY, for 'cox' is more active than it has ever been. Resection is used earlier rather than as a last resort for bleeding. It is also becoming known (Cotton, et. al.) that removal of a pulmonary focus practically excludes a pulmonary or general dissemination . . . Fairly good results have been claimed for thyl vanillate, though it is a most unpleasant stuff. The Merrell Co. says that their fenicholate, MRD-112, is very effective against *C. immitis* in vitro, but they avoid claims and are watching its early use carefully.

PERNICIOUS ANEMIA first began to take a punch in the nose back in the 1920's, by Minot and Murphy of Boston . . . The most recent blow aimed at the disease has also literally been to the nose, by Monto and Rebeck of Detroit. They describe the inhalation of vitamin B-12 by a nasal spray, in an article in the 'Archives of Internal Medicine' . . . Their series is composed of 12 cases with relapse and 20 cases on maintenance therapy, with excellent results up to 18 months, and with no evidence of toxicity or sensitivity . . . They mention, of course, the cost, pain, inconvenience, or bad taste of liver derivatives used by other portals.

The use to which statistics are put depends on where you stand, or your metabolism, or some such modification . . . e.g., the significance of a decrease in ADMISSIONS TO TUBERCULOSIS SANATORIA in 1953. One can say that there was a drop from 1952, and decide TB is licked. Or, one could look at the figures, see that the change was from 109,925 in 1952, to 108,471 in 1953, and decide that the difference was not statistically significant. (The number went up from 107,181 in 1951, and it was simply said to be due to better use of more facilities) . . . We had better keep right on 'licking TB' for quite a while, and not neglect to use the sanatoria.

A Pfizer 'spectrum' article in the A.M.A. gives us biochemists and physiologists who have gotten a few years behind quite a jolt . . . As they say "Once Upon A Time the PLASMA PROTEINS consisted merely of albumin and globulin, and all they did was form a ratio, generally

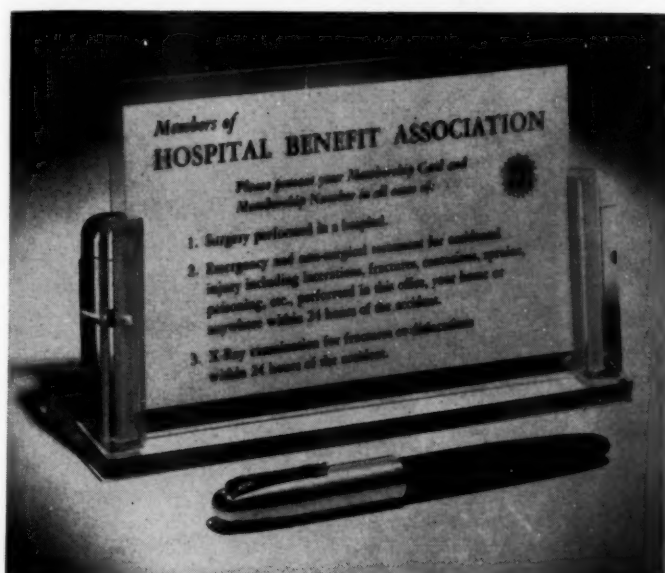

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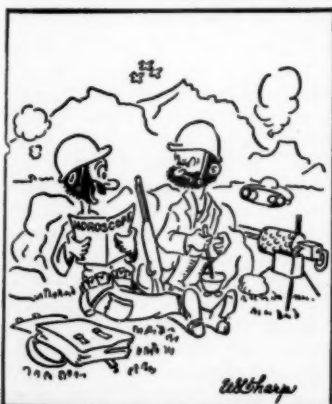
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too low" . . . They add that 35 fractions have now been identified, by dint of a forced research program during the war, but 10 per cent of the plasma protein is still not labelled . . . Here is a chance to be a hero, and all it requires is a few chemical, physical, electrical, and isotopic techniques.

It should be soothing to a person who hasn't WRITTEN A MEDICAL BOOK to know that vanity, money, and lack of objective have resulted in a very large number of unused volumes on library shelves (and in the author's cellars) . . . The Bulletin of the Los Angeles Medical Society further soothes those who are trying to write by stressing the old axiom "An author must write two million words out of his system before he will begin to write well". . . . If this is an invariable rule, you only have to wade through two more years of Guillermo Osler before the stuff begins to sparkle.

A boost for an Arizona snake-bite treatment also comes from Los Angeles. Dr. Gilbert, the County Health Officer, recommends the 'L-C' method described by Professor Herbert Stahnke of Arizona State . . . The L-C method means 'ligature and cryotherapy' (and 'cryotherapy' means 'cold'). The combination can eliminate the cut-and-suction procedure, and is valuable for many types of venomous bites and stings . . . If anyone recognizes part of the method you can be sure it appeared in ARIZONA MEDICINE first in the symposium on "Bites and Stings of Small Desert Animals". We quote the description of Dr. Gilbert, — "Assuming the bite is on the hand, foot or leg, a constricting band is placed a short distance above the puncture wound immediately after the bite occurs. Since the idea is to slow down the flow of venous blood back to the heart and yet permit the free circulation of arterial blood, it is important not to have the band too tight. A piece of ice is then placed over the bite while a quantity of ice and water is obtained and put in a container large enough to permit immersion of the limb well beyond the ligature.

"After five minutes of immersion, the band may be removed. The limb must be kept in iced water for at least two hours. If the rattler happens to be large, or the victim a small child, this treatment may have to be kept up 1½ to 20 hours.

"The method prevents the venom from traveling through the system in amounts large enough to overwhelm the body's natural defenses."

This is either the seventh or eighth 'cure' for TRICHOMONAL VAGINITIS which has seemed worth a paragraph. It comes from Germand and Gallagher, by way of 'Obstetrics and Gynecology' . . . The name of the powder is "TRI-VA", composed of 35 parts alkyl adyl sulfonate, 53 sodium sulfate, 2 oxyquinoline sulfate, and 10 of lactose . . . Douches are taken twice daily

for 6 days, then daily for 6 days. The trich. may be eliminated in a week (as may mycotic or monilial organisms), and 43 of 45 remained absent for 3 months . . . The germs may be frightened, or 45 cases may not be enough, or the series may need repeating, or the method may be good. Mas des puses.

The earliest cases of 'CAT SCRATCH DISEASE' were forced into this column over the protests of a secretary who was a 'cat' woman, and cats just couldn't do that sort of thing (except perhaps to deserving people) . . . Now we have a 'dog' woman, and we can freely print that Daniels and Mac Murray of Washington have described 160 cases of the result of cat scratches . . . The lesions may be large and persistent for months; the general symptoms may be severe; a specific skin-test is available, but the causative factor is uncertain; and antibiotics may help speed the parting cutaneous guest.

'Minnesota Medicine' considers the high cost of malpractice insurance through the eyes of a non-medical guest editorial writer, an insurance representative. . . . He mentions that physicians lack an understanding of the problem; the awards by juries are high; a waning personal relationship between doctor and patient exists; and the questions which the physician may ask himself to help correct the situation should include the following:

Do I follow the rules of my profession?

Do I follow the honest and safe practices?

Do I realize that insurance companies are subject to the same economic pressures as my own?

Are claims morally and legally honest?

Are insurance costs in line with my own, considering current conditions, and not conditions of twenty years ago?

Have I opposed socialization of the insurance industry, as I have my own business, remembering when socialism gets its foot in the door in one important branch of the free enterprise system, it will soon be in the door altogether?

. . . P.S.—We still don't like the terrific rates.

We must add the inevitable correction or modification to a new idea, the "Day-light Fluoroscope" which was described here last month. The general idea has been called "Fluoroscopic Image Intensification" . . . It seemed like a wonderful idea then, and still is, but one x-ray salesman says, — 1. It is bulky; 2. The screen is very small; 3. The device and table costs \$17,000, and the device without the table \$8,750; 4. It is not for use by the practicing radiologist, and a special use must still be found for it . . . (This x-ray salesman isn't speaking from sour grapes; he can sell the device).

Other data on the same subject have come from another salesman of x-ray equipment, in Phoenix. (He says he is an 'avid reader' of this column. This is not exactly an invasion of privacy.

but it could lead to self-consciousness, since we have heard that two people in Chicago, a surgeon in Oakland, three people in Pasadena, a lawyer in Phoenix, some Florida orange-juice people in New York (1), and several others also read the column) . . . The kind Phoenix informant writes about the same basic idea as is used in the Westinghouse apparatus, but his "Philips L.I." equipment is a smaller 'peek-hole' device and costs less . . . His letter contains quite a few technical terms which, like Einstein's theory, are understood by only a few of us. Deleting this verbiage, it can be reported that the method was first described by Burger in 'Acta Radiologica' in 1949, and demonstrated in Europe in 1951, '52, and '53. (And soaking of demonstrations it was shown at the Memorial Hospital in Phoenix on July 19th) . . . It produces an image 1,000 times brighter than that on the usual fluoroscopic screen. The image may be viewed through a binocular attachment, or photographed with a high fidelity camera. No mirrors are used, which can be for or against the method . . . There is no doubt that both methods reduce the number of roentgen units received by the patient and operator . . . We believe that the basic idea is still looking for a place to land, and the Philips' advertising agrees by saying the equipment is "available for research and development" . . . Thanks for the data, Mr. L. . . . We predict that a use W.T.L. be found, and that the device will be modified (and that the sun will rise tomorrow).

AMA AT SAN FRANCISCO

YOUR executive secretary was again privileged to attend the annual meeting of the American Medical Association, 103rd Session, held in San Francisco, June 21 through 25, 1954.

Medical Civil Defense

Arriving a day early, it was possible for me to attend the morning session, Sunday, June 20 of the Medical Civil Defense Conference conducted by the council on national emergency medical service of AMA in the Palace Hotel. Stafford L. Warren, M.D., conference chairman, called the meeting to order establishing the theme "What Can The Doctor Do?" Arlo Alfred Morrison, M.D., president, California Medical Association, delivered the welcome. Following in succession were these presentations: (1) The Problem of National & State Civil Defense — "What Can the State Directors Do?", by W. M. Robertson, major general, USA (Retired), director, California State Office of Civil Defense, who also presented the film, "Operation Ivy", previously seen by many of you; (2) The Local Problem and Mobile Sup-

port by Harold C. Lueth, M.D., member AMA Council of NEMS, who reviewed expectations in-and-around Chicago from a one to seven mile radius following direct hit by the "H" bomb; (3) Warning, Dispersal and Communication by Justin J. Stein, M.D., chairman, Committee on Military Affairs and Civil Defense, California Medical Association; (4) Patient and Doctor Relationship during Emergencies by Edgar M. Dunstan, M.D., chairman, Committee on Medical Civil Preparedness, Medical Association of Georgia; (5) Panic During Disaster by James Tyhurst, M.D., Allan Memorial Institution, Montreal, Quebec; and (6) The Federal Civil Defense Medical Program by Robert H. Flinn, M.D., director, Health Division, Federal CD Administration. Summarizing: I would conclude the new word of the day to be "DISPERSION". Approach of an atomic attack might be detected and limited warning time may prevail; however, once certainly, once having begun, prevention of delivery of a single missile is impossible. The only hope, therefore, is to disperse as many people as time will permit and distance will allow from heavily concentrated population centers, the target areas. This requires an entirely new approach to salvation. With the terrifying aspect of having large areas and segments of our population completely destroyed, including doctors, hospitals and allied medical installations, it behooves medical doctors throughout the land to be prepared to meet such emergency anywhere in our great country.

Conference of Presidents

Sunday afternoon was devoted to the tenth annual meeting of the Conference of Presidents and Other Officers of State Medical Associations, likewise held in the Palace Hotel, Gold Ballroom. Presided over by Louis M. Orr M.D., president of the conference, Percy E. Hopkins, M.D., president-elect, discussed "Spheres of Medicine"; followed by a panel discussion on "Doctors and the Press" from a magazine editor's point of view; by Steven M. Spencer, associate editor of the Saturday Evening Post; from a science writer's point of view, Alton L. Blakeslee, Associated Press; and from a physician's point of view, Herbert P. Ramsey, M.D., AMA co-chairman, Committee on Blood, and president of the medical society of the District of Columbia. Robert L. Stearns, director, Boettcher Foundation, Denver, and

former president of the University of Colorado, presented the subject "Are Public Relations Programs Worth What They Cost?"; and James Mussatti, general manager, California State Chamber of Commerce, discussed "Our Common Aims". While, in my opinion, the program as a whole was not up to "par" with previous annual presentations, if one could single out the most important message or thought left with those in attendance, it might possibly be the re-emphasis of the physicians' continuing responsibility to the public, aside from the medical aspect, as regards the socio-economic problems confronting the nation and its peoples today. Failure to recognize and assume this obligation is to shirk a duty and regard for good public relations.

AMA Meeting

All sessions of the House of Delegates and many of its reference committee meetings were attended by me. To spare repetition, with the knowledge that these important proceedings will be ably review and reported by our distinguished delegate, Doctor Jesse D. Hamer, I will not dwell thereon.

Respectfully submitted,
Robert Carpenter,
Executive Secretary

BOOK REVIEW

THE JEALOUS CHILD, by Edward Podolsky

In 142 pages Dr. Podolsky has encompassed many of the more serious emotional problems of children. However, the very brevity of this book seems to me its greatest drawback. While extremely sound in all that he states, nevertheless the net result would seem to me most frightening to any lay person who might choose to read this book by a psychiatrist of very great experience.

Psychiatry can be simple. It should explain and reassure. Dr. Podolsky has attempted to explain, but unfortunately he does not reassure. From the brief and cryptic foreward to the final page almost every conceivable problem of childhood is presented in its most serious ramification. Nearly every chapter begins with a startling and frightening statement which unhappily the next two or three pages do not adequately reassure or explain. Nowhere does the author give the impression that there is such a thing as a well-adjusted child who can be subjected to the average vicissitudes of life,

emerge a healthy, happy and productive individual, and not present severe emotional problems at one time or another.

In conclusion, I feel that this book is neither fish nor fowl, and more important does not do justice to the experience or wisdom of its author. It is inadequate as a text-book for medical men and equally inadequate as a source of information for parents or lay people in general. I feel that Dr. Podolsky has sacrificed thoroughness for brevity and the net result is unfair to author and reader alike.

Charles P. Neumann, M.D.

RADIOTHERAPY IN ITS RELATION TO DERMATOLOGY. B. W. Windeyer, Professor of Radiology, University of London. *British Med. Journ.*, April 24, 1954. In dermatologic practice the effect desired from radio-therapy is usually limited to the skin, so that x-rays generated at a voltage of not more than 100 kv. is the common practice. The two technics usually employed are multiple small doses for inflammatory conditions and many dermatoses, or a single large dose such as for epilation and some superficial malignancies. This author then discusses radiotherapy in inflammations and dermatoses, mentioning especially lupus vulgaris, psoriasis and pruritus; angioma; keloid; temporary depilation. He then discusses several malignancies, among them rodent ulcer, squamous cell carcinoma, epithelioma of lip, naevocarcinoma. He discusses discrimination in the use of radiotherapy, and finally the ideal relationship between radiologist and dermatologist, which he thinks should be one of collaboration and not complete independence of each specialist.

MYOCARDIAL INFARCTION IN YOUNG MEN. Country, in U. S. Armed Forces Medical Journal, May, 1954. Realizing that coronary artery disease occurs most frequently in the sixth, seventh and eighth decades, but also that it can occur in any group, this author reports his experience with myocardial infarction in patients 35 years old or younger. He has observed 14 cases of myocardial infarction in patients 35 years or younger during a period of four years. Overweight was a common finding and none occurred in underweight patients. Avoidance of obesity is advised.

SHOULDER JOINT INJURY. A beautifully illustrated article on "Dislocation of the Shoulder Joint and Infracture of the Humeral Head", by Robt. W. Newman of Iowa City, Iowa, appears in the *Journ. of the Iowa State Med. Soc.*, for May, 1954.

GASTRIC LESIONS. "Duplication and other Uncommon Gastric Lesions" is the title of an article by Joseph B. Priestley of Des Moines, appearing in *The Journ. of the Iowa State Med. Soc.*, for May, 1954.

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

THE LUMBAR INTERVERTEBRAL DISK PROBLEM. O. W. Jones, Jr., M.D., Associate Clinical Professor of Neurosurgery, Univ. of Calif., School of Medicine. *Industrial Med. and Surg.*, March, 1954. A description of the structure and life history of the intervertebral disk is given as a background for understanding the development of painful conditions in the lower back. Pathological changes in the fourth or fifth lumbar disks are most frequently responsible for the production of signs and symptoms referable to this area and to one or both lower extremities. In approximately 70% of all cases the onset of symptoms is associated with a history of specific stress or strain, whereas in the remaining group, symptoms appear slowly and intermittently. X-ray examination of the lumbar area aids in ruling out other conditions which may simulate the disk syndrome. Metastatic tumors to the lumbar spine or pelvis may produce symptoms months before the process becomes visible by x-ray shadows. There may be narrowing of one or more intervertebral disks with osteophytosis, but it does not follow that these changes are causing the painful symptoms. "Myelography should be employed in all instances in which a dislocated nucleus pulposus is suspected. In proper hands myelography carries no risk." "Any patient whose symptoms outlive a month's conservative treatment is entitled to myelographic examination." The operative result in the industrial patient compared with the private patient are uniformly poorer. This would seem to indicate that all industrial cases should be settled prior to operation, should the latter be necessary."

CARCINOMA OF THE BREAST. Importance of Internal Mammary Lymph Nodes. Handley and Thackry, *British Med. Journ.*, Jan. 9, 1954. "For the past 150 years isolated observers have been calling attention to the internal mammary lymph chain and its importance in the spread of carcinoma of the breast." No great notice has been taken in their words, because of the lack of convincing proof. On a series of 150 cases, these surgeons have biopsied the internal mammary glands in all mastectomies. In this series, it was found that 33% of the primary growths had metastasized to the internal mammary chain at the time of operation. Of the 61 growths in the medial half of the breast, 54% had metastasized to the internal mammary chain, six of these to that chain alone, the axilla being free. Of the 93 tumors which had metastasized to the axilla, 44% had also metastasized to the internal mammary chain. It has long been thought that met-

astasis to this chain of lymph nodes was a late development, but this investigation demonstrated the frequency of such involvement in cases operated upon as soon as the diagnosis is made. Surgical excision and radiotherapy are the only potentially curative methods which exist at the present time for attacking the internal mammary chain. B. W. Windeyer has been developing methods of irradiating this chain with sufficient intensity. Extension of the radical mastectomy to include this chain of lymphatics is being studied also.

DISEASE AND HISTORY. A very interesting article for those who like to extend their reading beyond the immediate demands of practice, this article by Howard N. Simpson, on "The Impact of Disease on American History" in "The New England Journ. of Med.", for April 22, 1954, will be enjoyable.

MYOCARDIAL INFARCTION IN RURAL PRACTICE. The Journ. of the Ind. State Med. Assn., May, 1954. Article by Dan L. Urschel, M.D., gives report on one hundred consecutive patients treated without anticoagulant therapy.

ALCOHOLISM. Geo. A. Constant, *Texas State Med. Journ.*, March, 1954.

HIATUS HERNIA. A good discussion by Lamar Soutter, M.D., in *The Rhode Island Med. Journ.*, April 1954.

ERYTHROMYCIN IN DERMATOLOGY. Wm. B. Cohen, M.D., *Rhode Island Med. Journal*, March 1954.

ANKYLOSING SPONDYLITIS. (Rheumatoid Arthritis of Spine). X-ray therapy in 242 typical cases and its results are described by Sharp and Easson, in *British Med. Journ.*, March 13, 1954.

RHEUMATOID ARTHRITIS. A evaluation of long-term treatment with cortisone. Engelman and others, *California Medicine*, May, 1954.

ACUTE APPENDICITIS. A study of Cases Before and After the Advent of Chemotherapy and Antibiotics, by Hamrick and Brannan. *Journ. of the Med. Assn. of the State of Alabama*, May, 1954.

PARATHYROID DISEASE. Laboratory Aids in Diagnosis. The fifteenth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists. This report is by Ellis S. Benson, M. D., of Minneapolis, and covers briefly the procedures which are of value in the clinical diagnosis of parathyroid disease.

ACUTE PANCREATITIS. Clinical Study of One Hundred Cases, article by Walter F. Becker, M.D., of New Orleans. *The Journ. of the Louisiana State Med. Soc.*, for May, 1954.

Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

THE ARIZONA HEART ASSOCIATION, P. O. BOX 2688, PHOENIX, ARIZONA.

The Arizona Heart Association through its local chapter recently conducted a program on "Help Yourself To Easier Work". This had so many participants and developed such wide public interest that this phase of the overall heart program will be continued and expanded in the coming year. It is offered as the answer to the physician's advice to his patients "you can carry on your housework if you take it easy".

The programming of this project warrants consideration. This organization with its wide medical support and wise medical direction, is to be commended for its part in correlating its activities with a governmental educational agency (the Land Grant College Extension Service). This makes for real economy, the use of existing facilities, as well as having a job done well.

AMERICAN NATIONAL RED CROSS, MARICOPA COUNTY CHAPTER, 329 NORTH 3rd AVENUE, PHOENIX, ARIZONA.

The big news in Red Cross is that the State of Arizona will be well represented at the Junior Red Cross Leadership Training Center to be held at Costa Mesa, Cal., on the Orange Coast College Campus, July 25th through August 1st. Teen-agers from Maricopa County Chapter of the American Red Cross will be Robert Ashe, Scottsdale High School; Zetti Lewis, Phoenix Indian School; Betty Coleman, Phoenix Technical School; Pat Meyers, West Phoenix High School; Elizabeth Dollar, Chandler High School; and Margarita Fernandez, South Mountain High School. There will be four teen-agers from the Tucson area and three from Prescott, representing their respective Red Cross Chapters.

EDUCATORS RECOGNIZE HEALTH ACTIVITY.

The following is in brief a part of the plat-

form of a candidate for the office of Arizona State Superintendent of Public Instruction. He proposes to closely and actively correlate his department's activities with that of the State Director of Public Health in health education.

Comment: Will this become more than a campaign promise in this day of bureaucracy at any cost?

A hurried count shows that there are more than 127 school nurses in this state, that there are 60 in Maricopa County. It is common knowledge that the accepted special training of a school nurse is a public health certificate.

From a public health standpoint, what Arizona home does not have a school contact? Can an added copy, a change of direction, and a cooperative effort make public health nurses and nursing, review and reporting of communicable diseases, possible through the school nurse corps? We physicians report and we have retained our identity.

This school administrator in his bid for public office shows who has the authority and acknowledges the educator's responsibility.

Sixty (60) public health trained school nurses in Maricopa County. Six (6) public health nurses requested by this health officer via budget for '54.

THE ARIZONA DIVISION OF THE AMERICAN CANCER SOCIETY, INC., 1429 NORTH 1st STREET, PHOENIX, ARIZONA.

The educational program of the Arizona Division, American Cancer Society is for the moment directed toward the controversial subject of lung cancer. Speakers and panel discussions are now the subject of service and business groups' meetings.

The Hammond-Horn report developed by the American Cancer Society and reported at the American Medical Association meeting in San Francisco is the current material. You, doctor, may have a copy of the complete release by writing the state office of this society.

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 E. WILLETTA, PHOENIX, ARIZONA.

This is the current program of this Association:

1. A study of the present status of patients discharged from the State Tuberculosis Sanatorium.

2. Cooperative program in health education for the Navajo people in Arizona using the portion of Christmas Seal Sale from Apache and Navajo Counties now held by the State Association.

3. Work Conference on Patient Services based on the Denver Pilot Study and observations at the National Jewish Hospital.

Also programmed is close relation between the Arizona Tuberculosis and Health Association and The Arizona Trudeau Society. Dr. Harold Kosanke, President of the Arizona Trudeau Society will appoint one of the Society's members as an advisor to each of the local tuberculosis associations in the state.

A central committee was appointed to develop a cooperative effort by the Arizona Cancer Society, the Arizona Heart Association and the Arizona Tuberculosis and Health Association to promote Routine Hospital Admission X-rays.

* * *

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 106 NORTH CENTRAL AVENUE, PHOENIX, ARIZONA.

This association completed a successful Postmen's Walk Campaign for the solicitation of funds on May 13, 1954, with an approximate gross receipts of \$13,000.00 This will continue the seven-point program and allow for further amplification of services during the forthcoming year to Cerebral Palsy victims.

The United Cerebral Palsy Association's seven point program is:

1. Expedite clinical diagnosis.
2. Conduct a state-wide survey of services available to Cerebral Palsy victims.
3. Carry out a broad program of parent education.
4. Provide direct aid to needy facilities for equipment, apparatus, aids, etc.
5. Continue liaison with other agencies.
6. Commence compiling a library of Cerebral Palsy materials and literature.

7. Conduct arts and crafts programs for pre-vocational, recreational and socialization purposes, as well as subsidizing salaries of trained professional personnel to existing facilities and agencies.

For 1954 a mobile van equipped to provide physical, occupational, speech therapies and the services of a medical social worker to Cerebral Palsy victims unable to use existing facilities by reason of transportation difficulties is being considered.

* * *

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 ARIZONA TITLE BLDG., PHOENIX, ARIZONA.

Contributions totaling more than \$93,000 were given to the crippled children's program during the recently concluded fund raising campaign of the Arizona Society for Crippled Children and Adults.

This year's Easter Seal contributions were greater than any previous collections by the Society, topping the 1953 total of \$76,000 by approximately \$17,000.

Funds contributed to the crippled children's program of the Society will be used to finance the various activities of the organization, including the Samuel Compers Memorial Clinic in Phoenix, Homecrafters adult rehabilitation in Tucson, a special speech program in Yuma, the statewide itinerant clinic program of diagnosis and therapy and county programs of individual assistance to handicapped persons.

The crippled children's program of the Easter Seal group will be continued during the coming school year through the cooperation of the Crippled Children's Division of the Arizona Department of Public Welfare and local medical societies.

Five, five-week clinics are to be held in Yavapai, Gila, Yuma, Cochise, and Graham Counties. The program will provide daily physical, speech and occupational therapy for handicapped youngsters in addition to training of parents in special techniques of handling crippled children, especially cerebral palsied youngsters.

An itinerant clinic program similar to the one recently concluded will be carried out in Mohave, Coconino, Navajo, Apache, Greenlee, Pima and Pinal Counties. Provision for more thorough followup on recommendations of the medical staff is planned. The dates for these clinics have not been set.

ARIZONA *Pharmaceutical* PAGE

T **CUSTOM MADE OR READY MADE** By Doctor Joseph A. Zapotocky

TODAY, PHARMACEUTICAL MANUFACTURERS HAVE PREPARED AND MARKETED SO MANY OF THE STANDARD PRESCRIPTION NEEDS OF THE PHYSICIAN THAT HE HAS AT HIS COMMAND A MYRIAD OF COMBINATIONS OF DRUGS AND SELDOM USES THE PHARMACIST'S SKILL IN COMPOUNDING. IN MANY CASES, THE READY-MADE COMBINATIONS ORIGINALLY WERE FORMULAS WHICH HAD RATHER UNIVERSAL APPEAL AS EFFECTIVE THERAPEUTIC AGENTS. MANUFACTURERS CAPITALIZED ON THE POPULARITY OF THESE FORMULAS, AND COMPOUNDED AND MARKETED THEM UNDER A VARIETY OF TRADE NAMES. SOME OF THESE TRADE NAME PRODUCTS ARE SO WELL KNOWN THAT THE CONTENT OR COMPOSITION OF THE PRODUCT IS SECONDARY. MIXTURES CONTAINING A THERAPEUTIC AGENT WITH PHENOBARBITAL, POTASSIUM IODIDE, CODEINE SULFATE, ATROPINE SULFATE, EPHEDRINE, DIPHENYLHYDRAMINE, AND NUMEROUS OTHERS ARE WELL KNOWN TO ALL. THE ABILITY OF THE LOCAL PHARMACIST TO PREPARE EXTEMPORANEOUS COMBINATIONS IS OFTEN OVERLOOKED AND A READY-MADE, TRADE-NAME PRODUCTS PRESCRIBED IN PREFERENCE. BECAUSE IT IS EASIER TO WRITE PRESCRIPTION FOR A TRADE-NAME THAN TO WRITE OUT THE NAME AND QUANTITIES OF THE INGREDIENTS FOR THE PHARMACIST TO COMPOUND THE PHYSICIAN SACRIFICES SOME OF THE FREEDOM OF CHOICE HE WOULD OTHERWISE HAVE. A MANUFACTURER CANNOT HOPE TO MEET THE NEEDS OF EVERY PHYSICIAN OR CAN CATALOG LISTINGS OF PRODUCTS SATISFYING THE NEEDS OF THE PHYSICIAN WELL VERSED IN THERAPEUTICS. THE VERSATILE PRESCRIPTION WRITER CAN BE SATISFIED ONLY BY A SKILLED, WELL-TRAINED, UP-TO-DATE PHARMACIST. YET THIS SERVICE IS NOT USED TO ITS FULLEST EXTENT. ONLY ONE OUT OF EVERY FIVE PRESCRIPTIONS WRITTEN TODAY REQUIRES ANY COMPOUNDING IN THE PHARMACY.

EVEN THOUGH VERY LITTLE COMPOUNDING IS DONE, IT SHOULD BE REMEMBERED THAT THE PHARMACIST MUST STILL USE HIS TRAINING AND KNOWLEDGE FOR THESE SO-CALLED POUR OUT OR COUNT OUT PRESCRIPTIONS. HE MUST BE FAMILIAR WITH THE CHEMICAL AND PHYSICAL PROPERTIES OF THE DRUGS HE DISPENSES SO THAT HE MAY HAVE KNOWLEDGE OF THEIR STABILITY AND PROPER METHODS OF STORAGE BOTH IN THE PHARMACY AND IN THE HOME OF THE PATIENT. HE MUST BE ABLE TO RECOGNIZE SIGNS OF DECOMPOSITION IF POSSIBLE. HE MUST BE AN EXPERT AT TERMINOLOGY SO THAT HE CAN RELATE U.S.P., N.F., N.N.R., COMMON NAMES, CHEMICAL NAMES, AND BE CERTAIN THAT HE IS DISPENSING THE EXACT DRUG CALLED FOR ON THE PRESCRIPTION. THE DOSAGE, ESPECIALLY RANGE OF DOSAGE, SIDE EFFECTS, SYMPTOMS OF TOXICITY, AND MODES OF ADMINISTRATION ARE JUST A FEW OF THE OTHER PROBLEMS WHICH FACE THE PHARMACIST. HE MAY FIND IT NECESSARY TO ADVISE A PATIENT TO DRINK A CERTAIN AMOUNT OF WATER WITH HIGHLY ALKALINE SUBSTANCES SUCH AS DIPHENYLHYDANTOIN SODIUM (DILANTIN SODIUM) IN ORDER TO DECREASE GASTRIC IRRITATION, OR TO POINT OUT THAT CERTAIN DRUGS COLOR THE URINE AND THUS PREVENT UNDUE ALARM. HE MAY FIND IT NECESSARY TO CHECK ON THE DOSE OF A PRESCRIBED DRUG IF HE BELIEVES IT TO BE EXCESSIVE, OR TO CHECK ON THE AUTHENTICITY OF A PRESCRIPTION IF HE SUSPECTS FORGERY. THESE ARE JUST A FEW OF THE FACTORS THE PHARMACIST AUTOMATICALLY CONSIDERS EVEN THOUGH THE PRESCRIPTION REQUIRES NO COMPOUNDING.

IN THE COMPOUNDED PRESCRIPTION, THE PHARMACIST CAN GIVE THE PHYSICIAN AN EVEN GREATER SERVICE. HERE THE DOCTOR CAN CHOOSE BOTH THE KIND AND AMOUNT OF A BARBITURATE, IODIDE, SULFONAMIDE, ANTIHISTAMINE, OR ANTIBIOTIC HE MAY WANT TO USE IN A COMBINATION. HE IS NO LONGER LIMITED TO ONE COMBINATION OR ONE CONCENTRATION. HE CAN CHOOSE WHATEVER HE FEELS IS MOST ADVANTAGEOUS FOR EACH SPECIFIC PATIENT. THE COLOR AND THE FLAVOR OF THE COMPLETED PRESCRIPTION CAN ALSO BE ALTERED TO SUIT THE TASTES OF BOTH OLD AND YOUNG. MEDICATION NEED NOT BE UNPLEASANT OR UNSIGHTLY.

Woman's AUXILIARY

WOMAN'S AUXILIARY TO THE AMA CONVENTION REPORT JUNE 1954



Mrs. Brick P. Storts

THE Woman's Auxiliary to the American Medical Association met in San Francisco June 21st through June 25th for their 31st annual convention. Headquarters were at the Fairmont Hotel.

More than 2,000 women registered, representing 66,000 members in every state, the District of Columbia, Alaska and Hawaii.

Work shop sessions were held on Monday at the Mark Hopkins Hotel. National Committee chairmen led these round table discussions of Auxiliary projects in legislation, mental health, nurse recruitment, Civil Defense and Today's Health. We were urged to study and learn about the Auxiliary program in order that we may do something about good Public Relations and good Health Education. The two go hand in hand. Together we progress. It was pointed out that the magazine "Today's Health" is published by the AMA, at a great financial loss, in the interest of good health education. It is the best liaison between medicine and the lay public.

Mrs. Richard Stover, National Chairman of the Auxiliary's "Today's Health" committee pre-

sented awards to the states winning the subscription contest for 1953-54. The following states received prizes: Group I (State auxiliaries with a membership of 1 to 400) Utah; Group II - (State auxiliaries with a membership of 401 to 1,000) Arizona, and Group III - (State auxiliaries with a membership of 1,001 to 2,000) Kansas. It was a thrill to accept this award for Mrs. James Soderstrom of Whipple, Arizona our "Today's Health" Chairman. A total of 38,189 subscriptions were credited to the Auxiliaries extensive promotional efforts. This figure represents an increase of 5,683 over the previous year.

Mrs. Ross P. Daniel of Beckley, West Virginia, the Auxiliary's Mental Health Chairman pointed out that only 6 states did not have Mental Health Chairmen during the past year. This phase of auxiliary program is new in emphasis and scope. Mental health is foremost in the minds of the American people today.

It leaves no scares but it embraces many phases of mental illness. Mrs. Daniel introduced Dr. Leo Bartemeier of Detroit, Chairman of the AMA Committee on mental health who spoke on this subject. He urged doctors' wives to volunteer their services to public elementary schools in the interests of mental health. He proposed that we (1) assist teachers in supervising youngsters in the halls, on playgrounds and at lunch periods. (2) Be on call to care temporarily for children who have no one at home to look after them, after school or in an emergency. Mental health begins in childhood, he explained. With so many working mothers someone else should provide the material affection their children fail to receive during their hours of employment. Teachers are busy and can become distraught at the end of a full day.

It was pointed out during the panel on Nurse Recruitment that it is a problem around the world. The films have been sent to 3 foreign countries and an outline of our program to England for study. Nurse recruitment affords a means of solving the problem of nursing supply and demand. Since this program was launched in 1945, State and County auxiliaries have given more than \$250,000 toward

nurse education. A total of \$80,000 in scholarships and loans have been given to nursing students. A total of 504 Future nurses' Clubs with 26,280 members have been organized by the various auxiliaries. These groups are designed to give high school students an opportunity to learn about nursing as a career.

During the public relations round table it was brought out that public relations includes every doctor's wife. We are looked to for leadership in our community, especially in matters pertaining to health. Public relations is every doctor and his family's business. It must remain a personal, individual problem. We must have good public relations among ourselves if we are to exhibit good public relations to our community.

A tea honoring Mrs. Leo J. Shaefer, President and Mrs. George Turner, President-elect, was held on Monday afternoon in the Gold Room of Hotel Fairmont. Hostesses were members of the Woman's Auxiliaries to the San Francisco Medical Society and the California Medical Association. Lovely orchid floral arrangements were used as table decorations.

General meetings were begun on Tuesday at 9 a.m. and continued until Thursday noon. National officers and chairmen reported on their work and State Auxiliary presidents reviewed the accomplishments of their groups in the past year. Election and installation of new officers took place on Thursday morning.

The annual dinner was held on Thursday night at the Hotel Fairmont. A highlight of the evening was the skit entitled "There is a Doctor in the House" put on by the members of the Woman's Auxiliary to the San Francisco County Medical Society.

Mrs. Leo Shaefer, of Salina, Kansas, president, presided at the luncheon on Tuesday, which honored past presidents and the president elect, Mrs. George Turner of El Paso, Texas. This event was held in the beautiful Venetian Room of the Hotel Fairmont. A fabulous fashion show of furs was presented by Saks Fifth Avenue. Dr. Lynn T. White, Jr., historian and president of Mills College, gave the main address on "The Changing Past." He explained that modern historians, in trying to reconstruct the voiceless past, are making strides toward understanding human activity apt to prove of more lasting importance than those made in medical science. He estimated that 95 per cent of human history

is unrecorded, because previously historians limited their work to written records, which were the product of the so-called aristocracy. This policy did not change until about the time of the French revolution. Thus history of the 95 per cent of humanity remained submerged.

The Wednesday luncheon honoring Mrs. Leo Shaefer and Mrs. George Turner was held at the Mark Hopkins Hotel in the Peacock Court. Mrs. David B. Allman, a past president, presided. Dr. Edward J. McCormick immediate past president of the AMA, was guest speaker. Guests of honor were officers of the AMA and members of the Advisory Council to the Woman's Auxiliary.

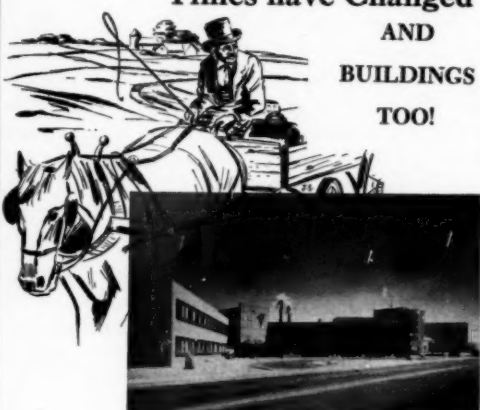
Dr. McCormick congratulated the auxiliary on behalf of the AMA and stated that the group had been of great help to him during the past year. He felt that the auxiliary should be larger — there are too many bachelors in the AMA. He stated that the women have proved a tremendous force in aiding the AMA in its effort to preserve the democratic principles of our country by contributing to the AMEF, selling "Today's Health" magazine, interest in nurse recruitment, rural health, mental health, etc. He urged us to carry on in these activities. He pointed out that the AMA has done more to call to the attention of the American people the problems facing them than any other group. The auxiliary is a vital part of this group.

Mrs. Shaefer presented a check for \$5,472 to the American Medical Education Foundation. The check was given in memory of deceased members of the women's auxiliary. A memorial fund of \$2,477 in honor of Corrine Keene Freeman, National president of the Auxiliary in 1932 who died last August was also given to the AMEF.

Two \$100 presentations were made to the World Medical Association and the Committee on Careers in nursing by the Auxiliary.


Dr. George F. Lull, AMA secretary, presented AMEF Awards of Merit to the Woman's Auxiliary of the AMA, the Woman's Auxiliary to the California Medical Association, and the Woman's Auxiliary to the Chicago Medical Society. The AMEF was organized in 1950 to stimulate contributions from members of the medical profession to the nation's 79 approved medical schools. Hiram W. Jones, executive secretary of the foundation, said that \$804,658

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has been contributed to the foundation by the medical profession this year.

The following officers to the woman's auxiliary to the AMA were installed at the closing session on Thursday morning. Mrs. George Turner, Texas, president; Mrs. Mason G. Lawson, Arkansas, President-elect; Mrs. Harlan English, Illinois, 2nd vice-president; Mrs. A. M. Okelberry, Utah, 3rd vice-president; Mrs. Clark Bailey, Kentucky, 4th vice-president; Mrs. Thomas d'Angelo, New York, 5th vice-president, Mrs. Carl Burland, California, Constitutional secretary, Mrs. George Garrison, Oklahoma, treasurer. Board of Directors: Mrs. Harold Johnson, New York; Mrs. Alfred Burnside, South Carolina; and Mrs. Henry Garnjobst, Oregon. Mrs. Leo Shaefer also becomes a member of the board. Three other women are serving the second year of their term on the board; Mrs. Truman Caylor, Indiana; Mrs. Paul Craig, Pennsylvania, and Mrs. Raymond Wayland, California.

The new officers were installed by Mrs. Roscoe Mosiman, a past national president and honorary member of the Auxiliary.

Mrs. George Turner in her presidential inaugural address, said that during her regime she plans to emphasize juvenile delinquency, prevention and traffic safety. She stated that delinquency is the result of a mental condition. On safety, she said that it is as important to save healthy lives as well as diseased ones. She pointed out that health leadership falls on the doctor's wife. The people in her community look to her for guidance and help in health problems.

At the Friday morning conference national officers, directors and committee chairmen met with state presidents and presidents-elect to hear a brief outline of the programs for 1954-1955.

Reports of officers and committee chairmen for 1953-54 will be given in detail in the next issue of the Bulletin — may I urge you to read about your organization. You will be justly proud of the accomplishments.

Arizona was represented at the convention by the following delegates: Mrs. Roy Hewitt, Tucson president-elect; Mrs. Paul Causey, Phoenix; Mrs. Jesse Hamer, Phoenix, National Historian and Mrs. William Shepard, Prescott, president of Yavapai County. As your state president, I acted as chairman of delegates from Arizona; read the president's report; served as time-keeper and have reported to you on the convention. Mrs. B. P. Storts, President.

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BOARD OF MEDICAL EXAMINERS

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, July 17, 1954, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

Sotero Antillon, Tombstone, Arizona; John Wright Cortner, 4850 E. Cecelia Avenue, Tucson, Arizona; Ralph DeCicco, 402 West Street, Shenandoah, Iowa; Clifford E. Ernst, 1130 E. McDowell Road, Phoenix, Arizona.

William Henry Ford, Morenci Hospital, Morenci, Arizona; Andrew Webster Gaudielle, 305 Woodland Drive, Tucson, Arizona; DeForest Raymond Hastings, 5500 Brookview Ave., Edina, Minnesota; Ernest Aubrey Henderson, 805 Avenue C, Opelika, Alabama; Clinton Leroy Holt, 405 Professional Bldg., Phoenix, Arizona.

Richard Lewis Huffer, 1033 E. McDowell Road, Phoenix, Arizona; John Allen Jones, 3522 North 3rd Street, Phoenix, Arizona; John William Jones, 694 East Southern Avenue, Phoenix, Arizona; Charles Henry Karr, 618 Central Avenue, Safford, Arizona; John Keith Kerr, 34 N. Macdonald, Mesa, Arizona.

Lester Ervin Kron, 1340 E. Indianola Ave., Phoenix, Arizona; James Andrew Laugharn, Box 35, Morenci, Arizona; Renate G. Leo, McNary, Arizona; William Henry Lyle, 201 First Avenue, Yuma, Arizona.

Warren James Nelson, 1204 Fifth Avenue, Safford, Arizona; Kenneth Howard Reichardt, 407 16th Street, Yuma, Arizona; Herbert Manuel Rubinstein, 1821 E. Seneca Street, Tucson, Arizona; Joseph M. Vigii, 127 Fourth Avenue, San Manuel, Arizona; Max J. Wollenman, 4718 North 3rd Avenue, Phoenix, Arizona; Woodson Clarke Young, 7030 North 15th Ave., Phoenix, Arizona.

Attention Doctor: Keep your 1954 Medical Directory up-to-date. Similar lists will be published quarterly following each meeting of the Board of Medical Examiners. Tear out this listing and keep it in your Directory Booklet.

VALUABLE ARTICLES IN CURRENT JOURNALS

(Beamed at the General Practitioner)

OFFICE HEMATOLOGY: Fourteenth in a series of reports on "Laboratory Aids to Medical Practice," from the Minnesota Society of Clinical Pathologists. Minnesota Medicine, April, 1954. Refers to routine blood tests performed on outpatients in the doctor's office. The doctor himself is responsible for the reliability of these procedures. Realize the limitation of the office laboratory and freely seek hematological consultation. A minimal hematologic screening for every new office patient should consist of: (1) hemoglobin or hematocrit; (2) total leucocyte count; (3) peripheral blood smear. An erythrocyte count gives little information and has great personal and technical error; it may well be omitted unless cell indices are to be done.

PENICILLIN AND ITS PROBLEMS. W. D. Paul, in South Dakota Journ. of Med., April, 1954. Penicillin is the only "teen-ager" in the fast growing family of antibiotics. "By common medical consent it is the drug of choice in the treatment of an impressive number of the bacterial infections most frequently encountered in practice." It would be strange if penicillin failed to develop certain teen-age problems. Penicillin reactions and the extent to which the population of the country has been sensitized to penicillin constitute one of the major problems. It seems likely that the efficiency of penicillin against various acute and chronic infections will be further enhanced by improved knowledge of dosage forms and administration.

THE CRUSHED HAND. M. L. Mason, M.D., F.A.C.S., Chicago. The Journ. of the Mich. State Med. Soc., May, 1954. The author has "tried only to stress the most important general principles which underlie the initial care" of the crushed hand. These include early care under adequate operating conditions; careful mechanical cleansing with soap and water; excision of tissue destined to necrosis; deep repair of nerves and reduction of fractures; tendon repair only in exceptional cases; closure of wound at first operation; molding of the hand on a splint in the position of function under a compression dressing.

CARE OF THE INJURED HAND. Michael L. Mason, M.D., Chicago, in The Journ. of the La. State Med. Soc., March, 1954. He discusses features of the care of open wounds of the hand which are important. Operative care of the wound is to be carried out under operating room conditions, even for trivial wounds. Operations on the hand should be in a bloodless field secured by a blood pressure cuff. Surgical procedures are discussed.

CARCINOMA OF THE CERVIX AND CONTROL OF VAGINAL DISCHARGE. By Dominic J. Pontarelli, in Deleware State Med. Journ., May, 1954. The foul smelling and irritating

chronic vaginal discharge associated with carcinoma of the cervix is treated by this author by a vaginal cream containing allantoin 2%, sulfanilimid 15% and 9-amino-acrodine, 0.2%, in a water miscible base with an acid pH (Allantomide Vaginal Cream Improved of National Drug Co., Philadelphia). Usually about ten days application of the cream is sufficient. The first application is applied by the doctor, and the patient carefully instructed in the technic of further applications.

PEPTIC ULCER. Current Treatment, From the Dept. of Medicine, Univ. of Chicago, article by Joseph B. Kirsner of Chicago, in The Journ. of the Iowa State Med. Soc., June, 1954. Discusses the dietetic and special methods used, and it is interesting that irradiation is given a prominent place, this procedure having been used in 1200 patients during the past 17 years. Ten daily applications are given to the acid secreting portions of the fundus and body of the stomach over fluoroscopically outlined anterior and posterior fields. This almost invariable produces an anacidity and healing of the ulcer with no recurrence during the period of achlorhydria.

ACNE VULGARIS. R. A. Osbourn, M.D., Medical Annals of the District of Columbia, March, 1954. Called "the scourge of youth" by this author. Acne should be treated early and each patient should be carefully evaluated from the standpoint of general health, foci of infection, and evidence of endocrine imbalance. Local therapy is important but must not be overdone. Fractional doses of x-ray is a valuable adjunctive treatment.

ACNE VULGARIS, Modern Treatment. Paul R. Kline, Journal of the Med. Soc. of N. J., March, 1954. A good companion article for the one by Osbourn. Many etiologic factors may be concerned in acne vulgaris, — some internal and some external, requiring combined systemic and local treatment. Vitamin therapy is stressed. A panthenol cream containing sulfur and resorcinol monoacetate is discussed. Hormones and x-rays are needed in selected cases.

THE MODERN TREATMENT OF ACNE VULGARIS. James W. Burks, Jr., Journ. of the La. State Med. Soc., March, 1954. He discusses general and local measures, emphasizing kutapressin, a new adjunctive drug in the treatment of acne.

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